5

BULLETIN OF THE

TAYLOR SOCIETY

A SOCIETY TO PROMOTE THE SCIENCE AND THE
ART OF ADMINISTRATION AND OF MANAGEMENT

Shaping Your Management to Meet Developing Industrial Conditions.—p.211

A Unique Control Board.—p.218

What Is the Taylor Society?—p.225

Master Budgets of Sales and Production.—p.229

Engineering Societies Building
29 W. Thirty-Ninth St.
New York

DECEMBER, 1922 VOL. VII., NO. 6

DEC 29 1922 LIBRARY

TAYLOR SOCIETY

ENGINEERING SOCIETIES BUILDING

29 WEST THIRTY-NINTH STREET, NEW YORK

OFFICERS OF THE SOCIETY

President .... Richard A. Feiss, Joseph & Feiss Co., Cleveland, O. (1923)
Vice-President .... Robert B. Wolf, New York (1923).
Vice-President .... Howard Coonley, Walworth Manufacturing Co., Boston, Mass. (1924)
Managing Director ...... Harlow S. Person, Taylor Society, 29 W. 39th St., New York.
Treasurer .... Edward W. Clark, 3d, E. W. Clark & Co., Philadelphia, Pa. (1923).

BOARD OF DIRECTORS

All the officers *ex-officio*, and

Ida M. Tarbell, New York (1923)

L. Herbert Ballou, Lewis Manufacturing Co., Walpole, Mass. (1923)

John Williams, Day & Zimmerman, New York. (1924)

Keppele Hall, The Joseph & Feiss Co., Cleveland, O. (1924)

HONORARY PRESIDENT

Henry R. Towne, Chairman of the Board, Yale & Towne Manufacturing Co., New York.

PAST PRESIDENTS

James Mapes Dodge, Link-Belt Company, Philadelphia (deceased).

Harlow S. Person, Amos Tuck School, Hanover, N. H.

J. E. Otterson, Winchester Repeating Arms Co., New Haven, Conn.

Henry S. Dennison, Dennison Manufacturing Co., Framingham, Mass.

LOCAL SECTION OFFICERS

NEW YORK

Executive Committee:

Robt. H. Wessman, The J. F. Tapley Co., Long Island City, N. Y.

Wm. H. Leffingwell, The Leffingwell-Ream Co., Flatiron Bldg., New York City.

Francis Goodell, New York City.

PHILADELPHIA

Chairman, H. K. Hathaway.

Secy.-Treas., R. H. Lansburgh, University of Pennsylvania.

CHICAGO

Chairman:
G. M. Bogue, Bureau of Commercial Economics, Inc., Chicago.

Vice-Chairman:
Hugo Diemer, LaSalle Extension Univ., Chicago.

Secretary and Treasurer:
Emil J. Schmidt, Sewell-Clapp-Envelopes, 23 N. Desplaines St., Chicago.

CLEVELAND

Chairman, Keppele Hall, The Joseph & Feiss Co.

Secretary, C. L. Sabin, Cleveland Engineering Society.

Treasurer, John D. Beale, The Pompeian Co.

NEW ENGLAND

Chairman:
Sanford E. Thompson, The Thompson & Lichtner Co., Boston.

Secretary and Treasurer:
Henry H. Farquhar, 727 Pleasant St., Belmont, Mass.

CENTRAL NEW YORK

Percy S. Brown, Corona Typewriter Co., Groton, Chairman.

Robert J. Anderson, Brown Products Corporation, Auburn, Secretary-Treasurer.

DEC 28 1922 ©Cl B554648

BULLETIN OF THE
TAYLOR SOCIETY
A SOCIETY TO PROMOTE THE SCIENCE AND THE ART OF ADMINISTRATION AND OF MANAGEMENT
Published by the Taylor Society at
Engineering Societies Building
29 West Thirty-ninth St.
New York
Copyrighted 1922, by the Taylor Society. Published every other month. Per Year to Members $2.50; to others $3.00.
This Issue $.75
Entered as second-class matter, Dec. 17, 1921, at the Post Office at New York, N. Y., under the Act of March 3, 1879.

VOL. VII DECEMBER, 1922 No. 6

CONTENTS

COMMENT 209

SHAPING YOUR MANAGEMENT TO MEET DEVELOPING INDUSTRIAL CONDITIONS 211
By H. S. Person

STRING BOARD GRAPHICS . . . 218
By Percy S. Brown

WHAT IS THE TAYLOR SOCIETY? . . 225

MASTER BUDGETS OF SALES AND PRODUCTION 229
By E. E. Brooks

AN ANALYSIS OF YOUR BUSINESS . 235
By W. H. Leffingwell

SHORT ARTICLES 239

TAYLOR SOCIETY NEWS . . . 243

REVIEWS 246

COMMENT

FOR the purpose of permanent record the program of the Fall meeting is printed on another page. From the point of view of attendance, considering industrial conditions, the meeting was reasonably satisfactory; from the point of view of the program, according to voluntary comments which have come from many who were present, the meeting was unusually satisfactory. There were by count about 140 persons at each of the six public sessions, and, according to the registration, some 350 different persons at all of the sessions. This means of course that each guest attended, among a variety of sessions, those which he believed would be of particular interest to himself.

THE unusual interest and value of the program was the result undoubtedly of the fact that most of the papers presented actual "cases" of management, and that the two sessions which did not present cases, dealt with subjects of current interest and great importance. Some of these papers are printed in this issue; others will appear in succeeding issues. The following telephonic communication (from a guest who had never before attended a Taylor Society meeting) is typical of many comments: "I want to congratulate the Taylor Society on that meeting last week, and to thank you for sending me an invitation. I went to hear one paper which I thought would interest me, and it interested me so much that I came back to hear others. There were no frills and the meeting was packed full of things of real value. I liked the atmosphere of serious purpose. I got ideas to help me on policy and many suggestions on methods of detail management." We like such communications.

WE have said above that, considering industrial conditions, the attendance was reasonably satisfactory. Industrial conditions have not improved to the extent that members—individuals and firms—do not consider seriously the expense involved in travel and spending one or two days at a New York hotel. But from another point of view the attendance was not satisfactory; the more serious the industrial conditions, the greater is the value of that which the Taylor Society has to offer at its meetings. It is a curious aspect of human nature that when business is booming and a search for new ideas and better methods is not so imperative, individuals and firms are liberal in the expense of attendance at such meetings; and again, when conditions are so bad that bankruptcy seems inevitable, a firm will send representatives to such meetings, with the idea perhaps that somewhere something can be snatched out of the air to save the situation; but that between these two extremes, when conditions are neither so good that such opportunities might safely be neglected, nor so bad that new ideas and methods can be of no avail—in fact at the very time when they can be of the greatest use—there is conspicuous conservatism in the matter of this kind of expense. Attention is called to the address by Mr. Person in this issue. If that address has any point, it is this: that industrial conditions are improving, but not to the extent and in the manner which makes management an easy problem during the next decade; and that, if executives are going to meet the critical managerial problems of two, five and ten years hence, now is the time to become busy about it. Meetings of the Taylor Society are designed to help them to get busy about it. Those who attended the meeting got inspiration and definite ideas concerning what to do. But a greater number should have been so inspired and helped. There should have been three to four hundred representatives of firms at each session and a thousand different representatives at all of the sessions.

IN the session on master schedules of sales and production two papers were presented which reflected policies which contemplate a moderate, regular increase in sales and production over a long period, regardless of cyclic changes in business conditions, instead of policies which contemplate grasping all the sales possible during a boom, without regard for the inevitable losses which have to be suffered in the depression following, caused by over-investment in plant, equipment and inventories. In the course of the discussion a guest—one of the ablest and most experienced among sales executives—remarked: "If all stockholders and directors could be convinced of the wisdom of a long-run policy of moderate increase, then the sales and production problems would be much simplified, master plans and budgets would be possible, and what is more important, 98 or 99 per cent of attainment of schedules would be practicable." Someone then made the observation that in a certain enterprise, at the time of a very favorable condition of the market, directors had raised the question, "Why should we be satisfied with a moderate increase when a greater increase is possible?" and had been presented with *schedules by the operating departments* which proved that the long-run, moderate increase, from the point of view of the long run and of the business as a whole, is the best profit-making proposition.

NOW these statements indicate the reason why the Taylor Society is trying to bring production executives and engineers together with sales executives and engineers for common consideration of their interdependent problems. There is involved, first, the determination of long-run policy; second, the participation of operating executives in determining that policy; and third, the manner by which operating executives may participate—may bring their experience and calculations to bear strongly on general management and directors in establishing policy. Pressure—the pressure of facts—can be brought to bear upon general managers and directors to establish correct long-run policy, only if the different departmental executives break down departmental barriers, learn to understand each other's problems, talk the same language, get facts and handle them in the same manner, make plans and schedules together, prove to their own common satisfaction the desirable policy, and then *together prove* to the general management and the directors the desirable policy. If operating executives want to succeed in bringing about the establishment of policies which will make good operating management possible, then they must abandon the too prevalent custom of isolated departmental plans and advice to general management; they must learn to work together. Too frequently each department works out plans and schedules by itself, goes to general management with these and presents them from a narrow departmental point of view, and, because general management thinks of everything from the point of view of the business as a whole, is turned down. The result is that, for want of a joint plan carefully worked out and presented by all operating departments, no convincing plan is presented to general management, and, because general management is far removed from detail facts, it proceeds by the method of guess to establish policies which do not permit the maximum results from good operating management. It is high time for production and sales executives and engineers to get together, and the Taylor Society offers them facilities for doing so.

YOUR PLANS FOR 1930

OF course you have been thinking about the influence of industrial conditions on your business in 1923, and possibly 1924. But what about 1925, 1927 and 1930? The wise executive thinks ten years ahead.

The article which begins on the next page will stimulate your thinking about the long-run conditions of your business. Every owner, stockholder, director and executive should read it. *Automotive Industries* (Nov. 30, 1922, p. 1060) "regards this paper . . . as one of the soundest and most important discussions in the last two years of the necessity for shaping management to meet changed industrial conditions."

SHAPING YOUR MANAGEMENT TO MEET DEVELOPING INDUSTRIAL CONDITIONS[1]

By H. S. Person[2]

IN THE conduct of any enterprise there is a major function, the responsibility for which resides somewhere in the organization, of determining future policy. In many enterprises this function may be regarded lightly, or even disregarded, on the principle that sufficient unto the day are the problems thereof; but in the larger enterprises, and in all well-managed enterprises of any size, it is not neglected. That is one reason for their good management.

2. The problem of future policy has many phases, of which the following come at once to mind: the commodities or services to be produced and sold; the quantities of these it is safe to attempt to produce and sell; the financial and technical equipment necessary; the technical methods of producing and distributing which shall be employed; the conditions of human cooperation which must be established in the enterprise. These, and many other major phases of policy not here enumerated, break down into numerous subsidiary, but also individually important elements. The difficulty of solving the policy problem is not reflected in the simplicity with which these elements may be enumerated, for they are not clearly separable, but are complicated and cross-sect one another. Furthermore, solution of the policy problem requires measurements and estimates of elusive and changing governing conditions—the variable demands of markets for particular commodities and services; the variable strength of actual potential competition to meet these demands; the availability of financial and technical resources and changes in these; the availability of workers and the changing conditions of their cooperation; restrictions or regulations which may be imposed by governments, and so on. And thoroughgoing measurements and estimates of such things as these lead farther into the consideration of factors still more elusive; changes in the habits, tastes and mental attitudes of peoples; the probabilities of new discoveries and inventions; changes in the social machinery for the conduct of industrial operations; that complex of conditions generally designated by the inclusive term "industrial conditions."

3. It is highly probable that an increasing number of enterprises will come to recognize that policy determination is a function which requires serious and continuous attention. It will involve the ascertainment of and analysis of facts concerning which executives have in the past had little interest, and it will involve above all—much and careful thinking. It is questionable whether the American executive can be characterized as a thinking executive so much as one intuitional in reaction to immediate facts; he himself has been proud rather to consider himself the doer and go-getter *par-excellence*—he who acts and gets while others think. If he is what he believes himself to be, he is the natural product of his economic environment; but one question to be raised tonight is whether there is not evident a sufficient change in the environment to make any such pride now unreasonable.

4. The particular phase of the policy problem which is to be considered tonight is presented in the question, "How must executives shape their managements to meet developing industrial conditions?" This question is fundamental, for a particular kind of management is an expression of decisions on many other matters of policy. The question is not to be understood as asking, "What new principles of management must be discovered and formulated to meet developing industrial conditions?" There are principles enough at our command—many more than have been generally recognized and utilized—to meet any conceivable conditions. We might change to a socialistic or communistic society and still be adequately served by the technical principles and methods already at industry's command. But under even moderately diverse industrial conditions we must utilize these principles and methods in different combinations, must weight them differently, in accordance with the requirements of particular circumstances.

---

[1] Paper presented at a meeting of the Taylor Society, New York, Nov. 23, 1922.

[2] Managing Director, Taylor Society.

5. Let us give our attention first to developing industrial conditions. A first glance is reassuring, for the revival due to follow the acute depression of 1921 is obviously already under way. This is indicated in all the reports of fundamental lines of activity. Bank clearings, car loadings, the production of basic commodities, and merchandise distributions have increased; stocks and bonds are more active; the spread between commodity prices has been reduced and in general a possible further long-run decline in commodity prices has been checked by price advances; there is an increase in employment and even in places a shortage of unskilled and skilled labor. Executives are reporting that they are "getting the red ink off their books"; and frequently there appear in the press optimistic utterances of captains of industry. We even already hear talk of a 1923 boom on the part of ultra-optimistic business men.

6. But a second, less superficial consideration of conditions causes us to hesitate to join those who believe "it is all over except the shouting." May not this evidence of revival be only the evidence of rebound from the extreme depression, and may not the present rate of acceleration be only temporary, to be replaced by a rate more moderate? May not the projection of a curve into the future on the assumption of a continuance of the present rate of revival be a dangerous basis on which to establish managerial policy for the future? The more thoughtful and cautious fear so. When there is eliminated the activity to supply seasonal and terminable demand, and particularly the intensive activity to supply the abnormal demand for fundamental necessities to which the exigencies of war denied satisfaction—for instance, construction and all the lines of industry attendant on construction—when there is observed the fact that consumers' demand for a wide range of commodities and services is continuing to be hesitant and cautious, there is not left a sufficient amount of evidence to warrant a projection of the curve of industrial activity into the future at its present gratifying slope. This point of view is expressed by a careful special correspondent of a dependable New York financial paper in a report from New England: "The only inference to be drawn (from facts enumerated) is that the bulk of the consuming public has been cutting off one thing after another in order to make its income go as far as possible in the matter of the commodities which it considers essential. Briefly, there are indications of a shrinkage in the American standard of living, which perhaps does not augur well for a long continuance of the present upward trend of industry, so-called." How many in this audience have not reduced their standard of living from what it was during the period of 1914-1921, and how many, because of personal circumstances, do not expect to continue to keep it reduced for some time to come? The demand permitted by the aggregate of personal circumstances is what makes the market.

7. A third and more penetrating analysis, this time of more fundamental conditions, is even disconcerting to those who believe it is all over except the shouting. During the past decade, as a result of the study of earlier cyclic movements, we have learned that certain economic phenomena, such as the quantity of money and credit, have a definite relation to industrial activity. The store of money and credit influences prices and the price movement influences industrial activity. We should recall that the long period of accelerating industrial activity culminating in the frenzy of 1920-21 was coincident with a long upward swing in prices; that in general industrial activity increases in intensity with an upward price movement, is stagnant when there is a downward price movement, and is hesitant and uncertain in the early years of a new stable price level. Of course, the ideal condition is a fairly stable general price level, but when a condition of stable price level suddenly confronts an industrial generation which has become accustomed to a consistent upward price movement over a long period, the new condition of stability, because different from the accustomed, is upsetting to the individual, either as demander or producer, and it takes a considerable period, measured not in months but in years, for him to learn just what he can safely do both in purchasing and in producing.

8. During recent years some sound work has been done in the analysis of fundamental industrial conditions and tendencies, which has given a basis for policy determination more substantial than anything we had previously had. It may be observed that during the past three years of experience wholly new to us, the forecasts of these investigations have "called the turn" more accurately than the prophesies—or guesses—of business men. These investigators have succeeded in making some accurate measurements of basic elements which determine price conditions for a number of years ahead, and the safest judgment to accept is that, in the words of the Harvard Committee on Economic Research, "the present price level is substantially that around which the fluctuations of the business cycle must play" for the next ten years. I make my own private

reservations to that broad statement, for I believe the Committee has failed to take into consideration the capacity of American managerial genius to vastly increase, when put to it under intensely competitive conditions, the quantity of goods for exchange which may be produced from a given combination of plant, equipment, materials and labor; but perhaps the Committee is wise in not taking that into consideration, for it depends upon the wills of owners and managers who are a conservative group when it comes to the adoption of new production methods. I think we should be wise to accept their judgment as the safest basis for business policy.

9. Assuming that forecast to be correct, what is likely to be the effect of a new, high price-level "around which the fluctuations of the business cycle must play?" Simply that you and I are, for a number of years, going to continue to be conservative as purchasers, and also conservative as producers. As producers we are going to wait for demand, and as demanders we are going to wait until we have adjusted our purchases to the new relation between our incomes and the cost of living. It is true that wages are settling at a new high level, but there still remains a large number of consumers whose incomes are not readjusted so easily and quickly, whose incomes are at present and will for some time continue to be adjusted rather to the old price level, and it does not take a very large bloc of maladjusted consumers to keep the market unsteady and uncertain.

10. The conclusion I would have you draw is that for, say a decade, consumers' demand is likely to remain so hesitant and uncertain as to be out of proportion to our capacity to produce. It does not seem necessary for me to give this particular audience any proof that the war has disclosed that our capacity to produce far exceeds anything we had believed it to be. I have talked recently with observing men who have covered the country from Maine to California, and they have reported that the most impressive single fact of their observations is the tremendous capacity of American industry to produce. You will recall President Friday's address at a meeting of this Society two years ago; he stated that one outstanding fact is the increase in our productive capacity during recent years, and that if the war has taught us anything, it is that we allow a large part of that capacity to "run to waste through sheer idleness." Now I put this question to you as practical managers: If our productive capacity is so great, and if it can be made much greater simply by eliminating sheer idleness, and if consumers' demand is fairly certain to be hesitant for the coming decade, have you or have you not a really critical management problem confronting you?

11. However, before considering the kind of management that problem is going to force upon you, I want to make one more, a fourth, analysis of present industrial tendencies, painting the picture upon a large canvas. Let us give the picture a striking American title: The Overland Trail—from a dominant sellers' market to a dominant buyers' market. We all appreciate that we are now in, at least a temporary buyers' market; I am suggesting that we are on the trail to a dominant buyers' market, and that we are possibly already on the great divide. If we are, we shall learn to manage our enterprises differently.

12. A summary review of the industrial history of the United States should make it patent that we have been brought up in a sellers' market. We have been pioneers—explorers, appropriators and exploiters of a vast continent of extraordinary resources. It has been a California of '49, or a Klondike, on the scale of a continent and a century. The exploitation of resources which have always had an immediate world market and cash value, the appropriation of stores of capital and treating it as income, has given our population a geometrically increasing purchasing power. Consumers' demand has kept ahead of and pulled along producers' capacity to satisfy the demand. We consumers have crowded about producers with outstretched hands full of purchasing power, begging them to give us something we could wear, eat, drink, parade before our friends, or otherwise enjoy. We have been drunk with a hoard of wealth and we have spent it like drunkards. As producers we bent every effort to satisfy this demand, and we have constructed for ourselves a tremendous productive equipment; as producers and distributors we were willing to get while the getting was good.

13. But there comes a time in the history of an appropriating and exploiting people, when they cease to be frontiersmen and appropriators; when the stores of nature's wealth are uncovered and appropriated, when future income through exploitation is capitalized at current values, when income becomes real income derived from productive effort and ceases to be in large part the appropriation of capital resources; when there emerges on the one hand a class of *rentiers* and on the other hand a larger class of laborers, clerks, sub-executives, major executives, merchandisers and others whose income is, on the whole, limited by the productivity of

their efforts and whose consumers' demand power tends to become correspondingly fixed. In other words, industrial society tends to become more stratified and stable. There is then the danger of a period of maladjustment when technical equipment and productive capacity have overreached immediate demand, and when, if other markets are not sought, a buyers' market succeeds a sellers' market as the dominant factor in the industrial situation.

14. There were signs before the war that the industrial development of the United States was approaching that stage of evolution. Natural resources had become pretty well appropriated and capitalized—not only such resources as mines, forests and natural transportation routes, but also agricultural lands, for there was before the war an increasing proportion of tenant farmers, paying rent in cash or shares. Serious students were concerned over this tendency. Technical productive equipment was at the same time greatly increased, and there was no sign of a plan or even a clear intent to develop foreign markets. President McKinley's turn, just before his death, towards a reduction of the tariff obstacle to the development of foreign markets made no impression on the dominant political party, and there continued a period of tariff policy which has culminated in the Fordney-McCumber bill. It seemed to thoughtful observers that the quarter century before the war was a period of conscious or unconscious eat, drink and be merry, for today we are getting ours and tomorrow will take care of itself.

15. Then came the war, which was a tremendous shock to the industrial system. On the one hand it caused a still greater development of productive capacity, financed out of future earnings through the mechanism of bonds and taxation, and caused a coincident decline in consumers' demand (the frenzy of 1920 was but an unsubstantial flare up), a decline which is likely to continue for some time because of the continuing heavy taxes and the maladjustments caused by the war. In short, the shock seems to have hastened evolutionary tendencies, which would have developed more gradually and with only relatively minor depressions, and to have thrown us suddenly upon a buyers' market which will last for some time and may be the beginning of a dominant buyers' market.

16. A buyers' market means, for industries that are not competitive, a more radical and restrictive control or regulation, for when buyers look long at the dollar before parting with it, they look longer at the conditions which create the necessity for parting with all of it; and it means, for competitive industries, a strife for the consumers' dollar which makes so-called competition on a sellers' market seem but a children's game. In view of all these considerations, I think you will agree with me that there was never a time when management should have more concern over future policy—and over the quality of its future management.

17. Management on a buyers' market is quite a different thing from management on a sellers' market. On a sellers' market selling is but order-taking; on a buyers' market it must be real merchandising. On a sellers' market production is but the hasty and wasteful process of giving material things a form or other quality which will satisfy insatiable and not overcritical demand; on a buyers' market it must be more precise and economical. On a sellers' market financing is largely borrowing on the assumption of unexploited natural resources or an unexploited upward market; on a buyers' market it is a borrowing on demonstrable future earned profits. On a sellers' market the conduct of a business is easy and management is simple—in fact there does not have to be any real management. But now that you appear to be face to face with a buyers' market and the necessity of developing real management, if you are to be successful in a most intense competition, if your competitor, instead of yourself, is to be the one to disappear in some readjustment of productive capacity to consumer demand, it is expedient for you to inquire into the nature of that real management.

18. The essential practical elements of the problem confronting that management may be summed up as follows: On the side of supply there is a tremendous production capacity involving heavy investments of capital in more or less specialized equipment, to preserve the value of which will require a continuation of the lines of activity for which it was designed. On the side of demand there is a conservative and hesitant market—in fact a buyers' market—which will continue for a considerable period. This will mean intense competition on the part of management to find the individual consumers and to sell them. In that competition selling price and cost of production will be critical factors. The hesitant market will tend to force selling price down, while higher prices of certain elements entering into cost will tend to keep that figure up. The fact cannot be disregarded that, as was the experience after both of our earlier great wars, wages have settled at a new high level, and that the strength of organized labor and new immigration policy seem

sufficient to hold them there during such a period as will determine the success or failure of competing enterprises. It should be observed also that many of the basic materials of industry are more or less closely controlled, and that material costs are likely to remain high. Therefore, management will be faced by high prime costs in the face of great pressure to reduce the selling price of fabricated products. The way out for the successful competitor appears to be this: to develop an inclusive system of management which will more than compensate for high prime costs by cost savings elsewhere, thereby effecting lower factory costs and making possible lower selling prices or making possible a higher quality of product at the original cost and selling price.

19. In the first place that management will give more attention to such problems as we are considering tonight—long-run tendencies in the industrial environment. These matters will no longer be regarded as merely "theoretical"; they will be regarded as very practical. Certain major executives will give more thought to policy and general plans, and not permit themselves to become too much absorbed in operating details and worn out by late afternoon worries. They will not confine their reading to the news headlines and market quotations of newspapers, but will read under the headlines, search for the facts and do some thinking of their own. They will find time for—and consider as important as some of the things for which they now find time—the reading of magazines of fact and opinion relating to administration, management, economics, politics and industrial relations. They will have in their organizations a unit to study and interpret industrial statistics. In illustration, a major executive of a certain medium-sized plant inquired of the Taylor Society the other day where he could find a young man, a college graduate trained in economics and statistics, to study for him the periodic reports of statistical services, and interpret them for the management in terms of the particular business. That enterprise is getting the jump on competitors.

20. That management, in the second place, will provide for a more accurate judgment of the market with respect to the demand for the commodities it has to offer, competitors' ability to supply the demand, and what share of the market it can have reasonable expectation of securing. It is with the consumer that the impulse for industrial activity begins—"the consumer is king"; but on a sellers' market consumers are so numerous and insistent that we forget the source of the impulse and come to believe that it starts with the producer. Under the competitive conditions of a buyers' market, managers will see that in true perspective. Managers will learn that they cannot afford to misjudge demand, either with respect to what it wants, how much of that it wants, or what share of it competitors will permit a particular enterprise to provide. Excessive inventories are fatal on a buyers' market. An enterprise must avoid that by some unit of the organization, whether it be an individual or a group, which will make continuous and precise analyses of the market and provide the data for master plans and schedules. Call it what you will—market research, merchandise research, sales engineering.

21. In the third place, that management will set up in writing, on the basis of the data secured by market research, definite master plans, budgets and schedules of operations for a considerable period ahead, these being supported by definite and interdependent detail plans and schedules for the major operating departments—selling, production and financing respectively. These master plans and schedules, and these supporting departmental plans and schedules, will be standards of performance, goals to strive for, lines to which to hew. To do without such plans and schedules means guessing, taking chances, departments out of alignment, unbalanced inventories, higher costs—losses for which the consumer willingly pays the price on a sellers' market, but which, on a buyers' market, become a loss to the producer which he cannot afford when competition is intense.

22. That management, in the third place, will have to conduct its selling operations with more skill than it has ever displayed before. On a sellers' market the consumer seeks the producer; on a buyers' market the producer must search out the consumer and sell him, in the midst of a keen competition both of other producers of the same commodity and other uses of the consumer's dollar. Just as there must be no misjudgment of the market, lest there be unsold inventories; no failure to make precise plans and schedules, lest there be unsold inventories; so also there must be no failure to search out and sell to the estimated number of consumers, or there will be unsold inventories.

23. Are we able to imagine the detail changes which are likely to follow the development of the new merchandising? Is it not probable that there will be less of that advertising whose object is to create new wants in satisfaction of which consumers would spend surplus dollars, and more of that advertising whose ob-

ject is to convince concerning the quality of staple merchandise offered in competition for the limited supply of dollars? Will not the work of salesmen be something besides either mere order-taking or mere psychological suasion; is not the salesman more likely to spend more time searching out prospects; calling on prospects as well as established customers; skillfully displaying the merits of goods; rendering intelligent—even scientific—service; planning and scheduling his work? Will not the supervision of sales executives and their assistants be more comprehensive and more skillful—again, more scientific—than anything we have seen; salesmen better selected, better trained, their work better planned and scheduled and given more intelligent and effective support by the directing staff? Will not the channels of distribution be more carefully studied and more discriminately selected?

24. I have called attention first to market analysis, master plans and budgets, and selling, as conspicuous features of the new management, not because they are superior in importance to other phases of management, but because they logically come first—the point of origin from which to lay out the operations of an enterprise being the consumer—and because in the sellers' market of the past, these phases have been most neglected. It is not to be assumed, however, that I attach less importance to better production methods as a feature of the new management.

25. There are some who assert that the production problem is solved and that we should now give most attention to other phases of management. I believe they are too hasty in their judgments, especially if we are thinking in terms of a severe competition on a buyers' market. The production problem is far from solved. It is true that we know more about good production management than about good sales management, and that we have a body of production management principles and practices at our command which, if utilized, would eliminate waste, reduce factory costs and permit price reductions to an astonishing extent; but it is equally true that they are not generally utilized, and the educational task of bringing about their utilization in a plant is as difficult and time-consuming a task as developing market analysis and improved selling methods. Perhaps more so, for the development of market analysis, master planning and selling is the problem of a small group of specialists, while the development of superior production methods is a problem involving the precise cooperation of many individuals of varying capacity for cooperation.

26. Furthermore, the more severe the competition the more important become good production methods. For in the final analysis, no matter how accurately we gauge the market, how precisely we prepare schedules of operations, how skillfully we sell, the greatest weapon in competition is the combination of a dependable product, a dependable service and a quotation lower than competitors, and it is superior production methods which contribute most to making this weapon possible. If you can safely and consistently quote a lower price for an identical commodity and have a reasonably good selling organization, your competitors will hold you in dread.

27. In the fourth place, therefore, the superior management of the next decade will develop the production department to a high degree of precision, in accordance with principles and methods already formulated and available. As some strong merchandisers secure their profits by taking discounts, so strong manufacturers can take their profits by eliminating waste—the waste of useless or unused plant; the waste of useless, unused or inefficiently used equipment and tools; the waste of unsuitable, inadequate or lost materials; the waste of inefficient methods; the waste of improperly chosen, improperly assigned, improperly instructed and inadequately inspired workers. Investigations and experiments will be conducted which will disclose the best equipment, tools, methods and materials for the fabrication of the product, and on the basis of the discovered best details will be established standards of product, equipment, materials and processing. Provision will be made for the maintenance of these standards, and these once established and maintained, a control of operations through planning, scheduling, and checking of progress will be possible, which, as has been demonstrated in too few but an adequate number of instances, forges the competitive weapon of lower costs and lower quotations.

28. Finally, that management will win the cooperation of all the personnel of the enterprise, not as a matter of humanitarianism but as a matter of technical necessity. Without such cooperation all other provisions for excellence of management are impaired. The good will of the personnel is in many instances the determining factor in successful competition. The combinations of elements by which this good will is won may be different in different enterprises, but all will be identical in at least two respects: a group of elements which secure the personnel's cordial consent to the standards of all kinds which are established, and a

sharing of the product of combined effort through wages which satisfy the personnel as reasonable and just.

29. The entire personnel of an institution, from major executive to the latest recruit, should be a cooperating group of individualities—cooperating, in the sense that each must play a part in a system of operations; individualities in the sense that each should be an original source of inspiration and new ideas, and a creator of new methods which fit and promote the work of the system. Too many institutions simply inbreed. Individuals lose their individuality and the organization loses its vitality. The greatest asset of an organization is not plant and equipment, cash in the bank, or even an organization of persons; but a spirit of cooperation, an atmosphere of live interest in the best management principles and practice, an *esprit de corps* of search for wiser policies and better methods and individualities which have not lost the power of creation within cooperation.

30. It is not out of place to call attention to a special aspect of the new management—the utilization of a new type of executive. The long sellers' market of the United States has developed highly one particular type of executive—the forceful, acquisitive, go-getter type which drives straight to results regardless of methods and cost. But while the forceful, go-getter type of executive will always be essential, managers have come to realize that an organization must be balanced by the inclusion of the thinking, investigating, planning type of executive who surveys conditions and tendencies, formulates precise plans, establishes schedules and budgets, keeps departments coordinated, maintains precise control of operations, has regard for efficiency and economy of methods, and all the time appraises progress and results in terms of plans. Even the go-getter executive, so useful in the early days of an enterprise, must become a thinking, planning executive after the enterprise is well established as a going concern. The thinking and planning type of executive will play a decidedly important part in the future.

31. In conclusion, it should be understood that I am not pessimistic concerning what I believe are likely to be the developing industrial conditions. At the worst, consider what has been said as a word of warning. In the long run our very capacity for production will solve the problem, as it has in the past solved it under comparable circumstances; but the restorative power of that capacity for production must be realized chiefly through a regulation by better individual managements. We shall have short-time cyclic variations, but fundamental increasing prosperity for industry is general during the decade of correction of maladjustments to new conditions. Note, however, the significance of the words "for industry in general." In the probable readjustment through competition on a buyers' market, some enterprises are certain to disappear, and they will be those particular enterprises which are satisfied with the management which is "just as good as the average," for that mental attitude almost invariably means managements which are poorer than the average. For a quarter century before the war even poorly managed enterprises were helped in their ascent to the heights of prosperity by the escalator of a sellers' market; now that escalator is out of commission, and the ascent to a new prosperity must be achieved in the good old-fashioned way—by good management muscles, good management lungs and good management brains.

WE have probably the highest ingenuity and efficiency in the operation of our industries of any nation. Yet our industrial machine is far from perfect. The wastes of unemployment during depressions; from speculation and over-production in booms; from labor turnover; from labor conflicts; from intermittent failure of transportation of supplies of fuel and power; from excessive seasonal operation; from lack of standardization; from loss in our processes and materials—all combine to represent a huge deduction from the goods and services that we might all enjoy if we could do a better job of it.—*Herbert Hoover.*

STRING BOARD GRAPHICS[1]

By Percy S. Brown[2]

THE mechanisms which I shall describe have been given the name string board graphics through lack of a more descriptive term. These graphics must not be confused with those of a permanent nature, though used in the same manner and for obtaining the same kind of information. Through their very nature they are for periodical control rather than for permanent data, inasmuch as the strings are moved back and forth either daily, weekly or for such other periods as one may desire to cover. All information of an historical nature is lost, except when it may be desirable to photograph the boards previous to each posting; in such instances records of a permanent nature might be secured, limited only by the inability to reproduce colors in cases where strings of various colors are used on the same board.

The idea of using a string board for graphic control occurred a few years ago to Mr. Edward J. Keller, then in active charge of our first planning board in the Route Division of the Planning Department. In the late summer of 1921 Mr. Keller, then planning engineer in charge of all planning work in the factory, was confronted with the need of more accurately controlling inventories. While considering various mechanisms whereby closer control could be established, it occurred to Mr. Kellar to again experiment with his string board idea. Immediately upon seeing the small board which he prepared, its outstanding advantages were apparent to me and I authorized the construction of four boards 6½' high and 7½' wide. After these boards were installed and in operation, we proceeded to build a number of smaller boards for the use of executives. We are also experimenting on small control boards in certain of the manufacturing departments. Those that I use are 45" long by 16" wide, and on the one described in Fig. 4 I attach the monthly production schedule sheet with thumb tacks and post in the production figures each day. When it is removed at the end of the month, it may be kept as a permanent record.

Mechanisms

The string boards may be of whatever size and shape the designer desires, depending on the number of parts, operations or other data he may wish to show. No matter what the size or shape, the same plan is followed: First, notches or grooves are cut along the top of the board, spaced as desired, and exactly parallel notches or grooves are cut along the bottom of the board. It may be desirable in some instances to substitute grooved rollers for the notches, particularly in the cases of very high boards where freedom of string motion may be impaired unless assisted mechanically. Along the left side of the board graduations are drawn, either on the board itself or on the heavy paper affixed to the board, and correspondingly along the right side of the board similar graduations may be drawn. These graduations may be continued across the entire board or only part of them may be continued, as they are merely to facilitate posting. At the lower edge of the board a heavy paper runner is placed, on which is printed the information as to the parts, operations, or names of whatever other items are to be controlled. A piece of colored string and a piece of white string of equal length are then tied together around the board, being drawn as tight as possible. When posting, the colored string, which is always at the bottom, is moved up to the proper point by taking hold of the knot and the knot then becomes the controlling point. Obviously, where a quantity of strings are used, the white string being against a white background, does not show, and colored strings posted across the board give a nearly perfect color graph.

The one difficulty that we encountered in making up these boards was in securing a grade of string or twine that would stand up. Ordinary commercial grades were absolutely unsatisfactory, but we were fortunate in that the Cayuga Linen and Cotton Company of Auburn, New York, who were supplying us with a very fine linen twine, were in a position to furnish

---

[1] A paper presented at a meeting of the Taylor Society, New York, Dec., 1921.

[2] Works Manager, Corona Typewriter Company, Inc., Groton, N. Y.

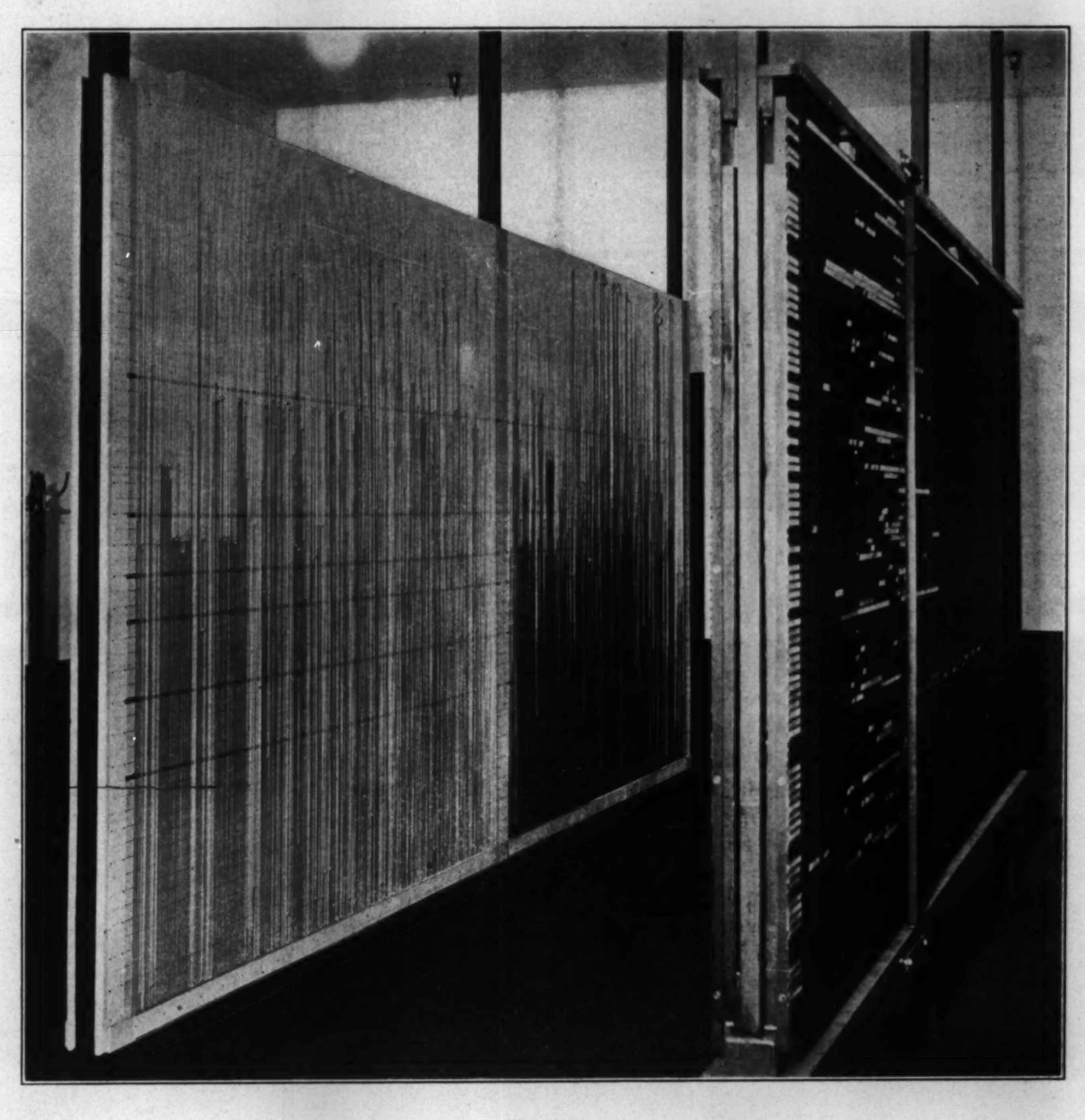


Figure 1

Photograph of String Control Boards. Left—Process Parts Board; Center—Finished Parts Board

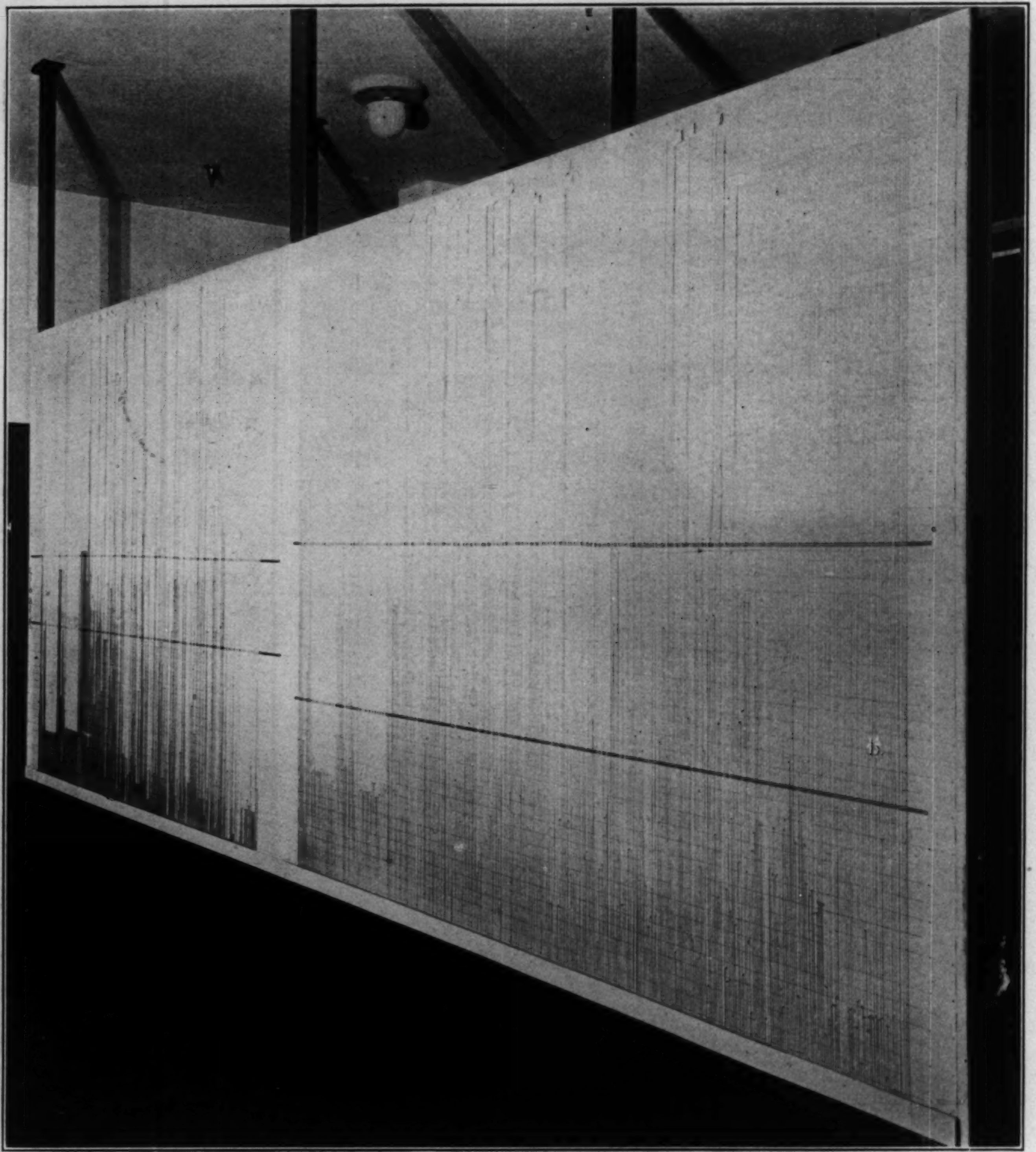


Figure 2
Photograph of String Control Boards. Left—Raw Material Board; Right—Total Board

colored twines of the same quality. We have been able to secure a twine of very uniform quality, practically free from lumps and other imperfections, running close to .050" in diameter in white, red, blue, green, orange, purple and yellow. Other shades could be secured if necessary. We have had absolutely no breakage on any of our boards, some of which have been in operation for six months and are posted daily.

Inventory Control Boards

Figure 1 is a photograph of the process parts and finished parts boards. It will be noted that these boards are of wood, painted with white enamel and that quantities are indicated on the strips running up and down the sides of the boards. Along the bottom are strips on which the part numbers are printed. Every string corresponds to a part number. In posting the process parts board, for example, the string is grasped at the knotted point and is moved up or down to a point corresponding with the quantity indicated on the side. In this way the board becomes a constantly changing graphic indication of the number of parts in process, or in finished stock, as the case may be. In carrying inventories of our parts we have had to establish different maximums and minimums. We therefore run tapes across the board at the minimum point and at the maximum point. For example, if we wish to keep our inventories between 5000 and 6000 parts, we run red tapes across at these points and use a red string for all parts controlled within these limits. For parts controlled between 7,500 and 9,000, we use a blue string and blue tape, and for parts running from 10,000 to 15,000 a green string and green tape, and other colors if additional limits are to be used. We then have a graphic board where three or more different inventory controls can be seen at a glance.

Figure 2 is a photograph of the raw material inventory board and a board showing the total of parts in process, finished parts and raw material, expressed in terms of Coronas. All boards are posted in terms of Coronas, so that each one is comparable with any other. For example, if there be four screws for the same part number used on the machine, 40,000 of them would be expressed on the board as 10,000 machines. Attention is called to the two groups of strings which are practically even and considerably below the minimum line. The reason for this is that these are parts such as type bars, each having different part numbers, all formed differently but made from the same blank. Inasmuch as the stock and blanks are interchangeable on twenty-eight parts, the actual minimum point is considerably less than for other parts. It would be feasible to indicate these with different colored strings and with a separate maximum and minimum, and this we shall probably do. It will be noticed also that a number of strings run to the top of the board with little tags attached. These are parts that we either purchase in very large quantities or because of their nature we manufacture in very large quantities. An example would be rolled thread screws which we manufacture in some instances in quantities sufficient for a year; other instances would be rivets, key rings, etc., which we purchase in quantities that would carry us from six months to a year. A close examination of the photographs would disclose some brads nailed into the boards just above the bottom strip carrying the part numbers. These brads are used simply to keep the strings in place on such high boards and screw eyes would be even more satisfactory. On shorter boards they are not used. On each board there are 750 postings and two clerks can do the 3000 postings in from three to four hours, one calling off and the other posting.

Figure 3 gives some idea of the method of controlling finished parts. It is a reproduction of a section of the Finished Parts Board shown in Figure 1. On both the left and right margin quantities are given, and at the bottom, part numbers. This chart is posted weekly from the Finished Parts Ledger. Due to the fact that in manufacturing parts to stock we consider the time required to manufacture the parts, the cost of the parts, and such other items, we do not carry the same maximum and minimum for all parts, but as shown on the chart, we carry four maximums and minimums. Those in green come under the 5000 minimum to 10,000 maximum; the yellow 5000 minimum to 50,000 maximum; the red 10,000 minimum to 15,000 maximum; the blue 15,000 minimum to 22,500 maximum. The very large difference between the maximum and minimum on the yellow strings is due to the fact that these are screws, rivets, etc. made on rolled thread screw machines where set-up is an expensive item and where the machine capacity after such set-up is very great. To make such parts in smaller lots than 50,000 is not economical. It will be noticed that parts Nos. X6, in blue, and X12, and X13, in red, exceed the maximum allowance. This shows a bad condition. It is our practice for the Chief Control Board Clerk to take such exceptions, giving a reason for these conditions. The same procedure is followed in the case of Part X16A, which falls below the minimum. It is quite obvious that the Chief Con-

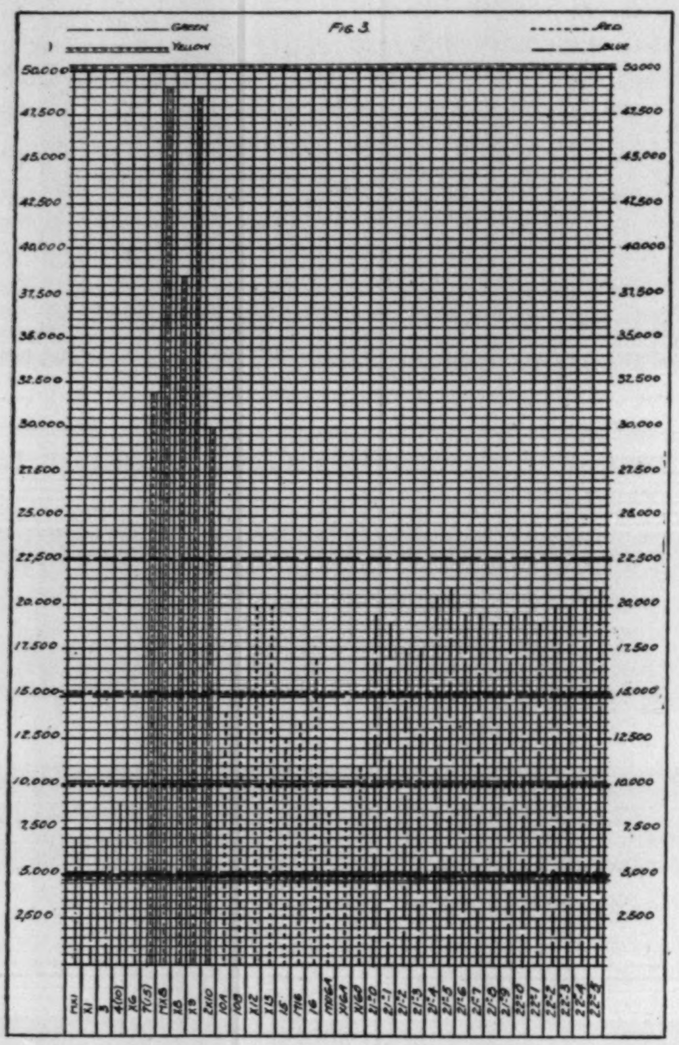


Figure 3

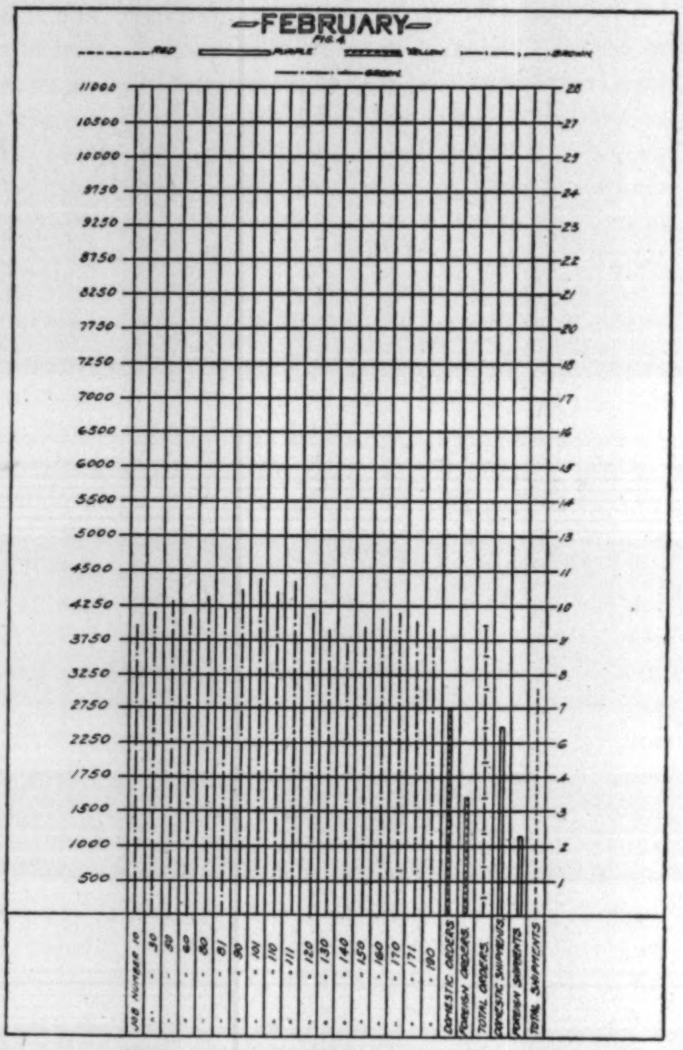


Figure 4

trol Board Clerk must have very good explanations for such abnormal conditions and see that they do not occur very frequently.

Figure 4 shows a chart giving the cumulative monthly production of all assembly jobs for the month of February, together with orders and shipments. This is merely a sample chart and does not show our actual production during February. It is drawn up to give an idea as to how a chart would look where perfect balance on all assembly jobs is not maintained. The left-hand margin gives the cumulative production which should be attained on the date indicated on the right hand margin. At the bottom are shown the different job numbers, together with the domestic, foreign and total orders, and domestic, foreign and total shipments. I have such a board in my office where the information is posted daily and whereby I am able to follow closely all assembly attainments. I can see at a glance unbalanced conditions and can take the necessary steps to remedy them. Next to this board is one showing cushions, which I describe under Fig. 5. These two boards give very close control on all assemblies. The question may be asked as to why domestic and foreign orders and shipments are shown while machines are not carried through assemblies as domestic and foreign machines. The reason is simply that I wish to know how the proportion is running, although the proportion has no direct connection with the control of assembly jobs. (The relation of domestic to foreign machines in process of assembly is controlled in another manner by the Planning Department.) Where a board of this kind is used, as for example, by the Planning Engineer, only total orders and shipments are shown.

Figure 5 is a chart which is posted daily to show the cushions of machines ahead of each assembly operation. For reasons which will be explained, it is section-

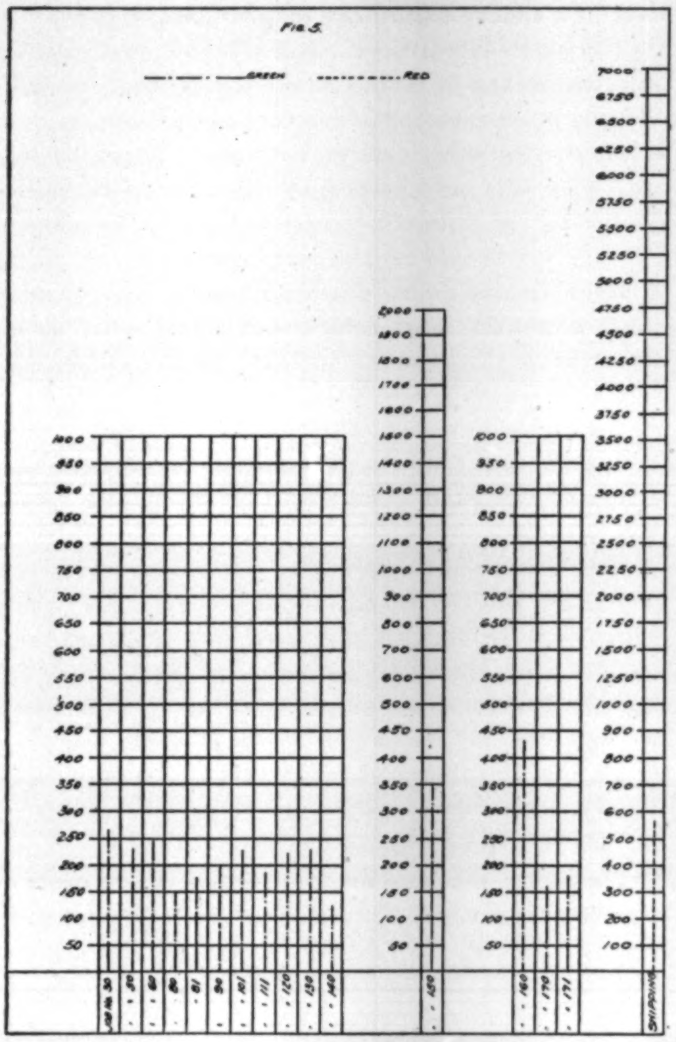


Figure 5

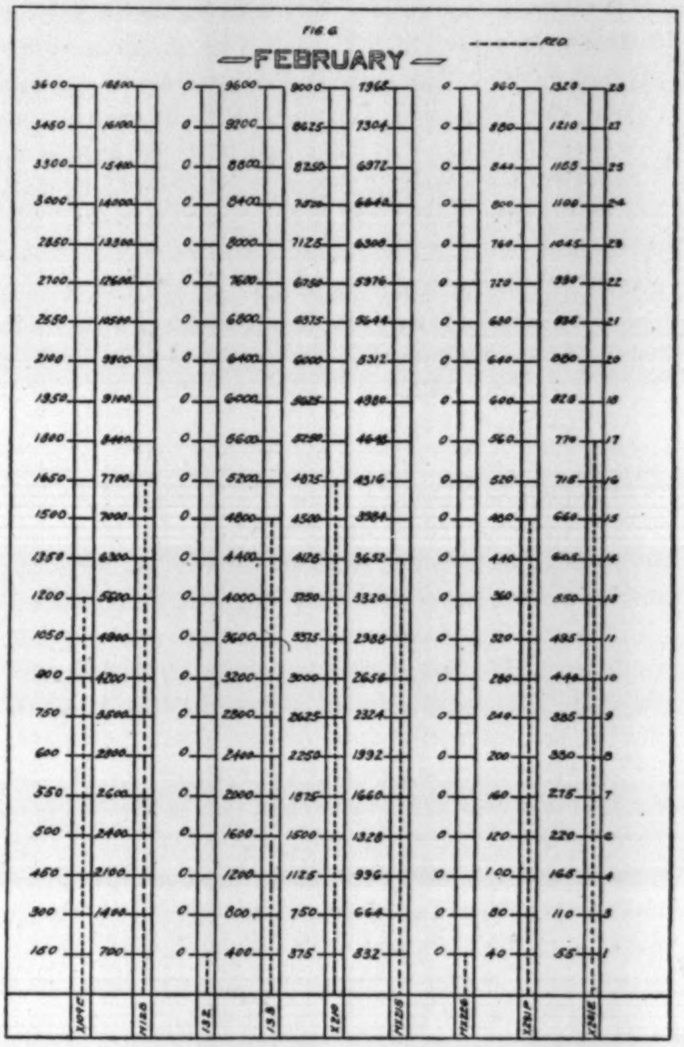


Figure 6

alized. The left section is used for posting quantities of assembled machines ahead of each job at our Cortland Plant. The single section next to it shows the quantity ahead of the next assembly, an operation known as "adjusting" (No. 150), which is performed at our Groton Plant. A very large cushion must be carried ahead of Job No. 150 because of transportation. For example, of the 350 machines shown, only 50 might be at the Groton plant; 250 might be in transit and 50 might be in Cortland awaiting shipment. The machines at this stage have to be transported by auto truck a distance of eleven miles. The third sections show the remaining assembling operations at the Groton plant where the cushions are the same as at the Cortland plant. The fourth section shows machines ahead of shipping or in stock, and is separately shown because on a chart of 1000, stock might run off the board. As I use the chart, I have a blue tape across each of the sections to indicate what I consider a normal cushion and to show unbalance. This chart, in connection with that shown in Figure 4, gives very satisfactory information on assembling conditions.

Figure 6 is a chart in the experimental stage, but the experiments so far have been very interesting. It is a monthly production chart and might possibly be used to good advantage as a production control board in a small manufacturing plant. The chart is made up with a pre-determined production requirement for each part indicated for the coming month. It is posted daily and is cumulative. In estimating the quantities, allowances are made for part cushions and lot sizes necessary for normal production. This is done by allowing one department to produce parts a little faster than another department in order that larger quantities may be sent to the next department performing the work. It is frequently the case that one department might work more economically on 5000 lots where a succeeding department may need 10,000 lots. Our preliminary experiments show that considerable interest is aroused among operators in the departments in which such charts are posted. It is submitted more as the nucleus of an idea than anything else, as only preliminary work has been done upon it. It is our belief, however, that it may be developed into a useful board for subordinate production control and scheduling.

I have no chart to describe an order board, which has been extremely useful, but it is so simple that it is easily described. This is a board of the same size as the others used in my office which I have divided into twelve sections for the twelve months. On the side it is separated in hundreds from 100 to 10,000. In each section I have a yellow string for domestic orders, blue for foreign orders, red for total orders, and green for machines final inspected. Each day I post cumulatively the information as to orders received and machines completed. On this chart I am able to post orders received for shipment, not only during the current month, but for succeeding months, so I have a graph that gives me some information as to future business. As each month is completed, I can see at a glance the difference between orders and production and the relation of foreign orders to domestic orders for a number of months and can get some idea of the business ahead. By entering each month's cumulative figures on the chart, I have a permanent record at the end of the year that can be transferred to my pen drawn graph book and can be readily compared with next year's string board graph.

Other Applications of String Boards

In this paper I have described factory applications of the string board, because it was on such that we have made our preliminary experiments. We are now preparing to extend the use of the boards for securing information in connection with employment, sales, etc. It is obvious at a glance that periodical records of attendance, number of men and women on pay roll and data of a similar nature can be used advantageously in the Personnel Department. It is also clear that valuable information can be posted on sales attainments by individuals, groups, states or divisions against quotas, past sales, or some other controlling factor. It is also possible to gather information of sales by classifications by the use of different colored strings. The application of these boards to sales, employment, etc., is purely a matter for individual consideration and development. What might be useful to one firm would be of no interest to another, but we feel that the board has considerable flexibility for data of this nature. We are now working on boards to be used in scheduling work in our tool designing and tool making departments, but are not prepared to report on their usefulness at the present time.

In presenting this paper I do not wish to convey the impression that we feel that we have struck on anything particularly revolutionary or even that it is something new. I have questioned a great many people regarding it and have met no one to whom the string board graph was anything but a new idea. This does not mean that it is a new idea, but merely indicates that it is not used widely enough so as to become recognized as one of the mechanism of modern industry.

The boards are quite inexpensive and can be made by any carpenter while the charts or strips can be easily made by anyone. During the few months that we have been operating our boards, we have had casual visitors examine the boards with great interest and in every instance they have stated that they know of many places where they could be used to advantage. These men represented quite varied industries, such as drill manufacturers, adding machine manufacturers, electric railways, steam railways, manufacturers of desks, filing cabinets, etc., steel mills, and many other lines of industry. In fact, the demand for information about the boards inspired the writing of this paper, which it is hoped may prove both of interest and value.

ONE does not maintain, let alone enhance, the value of his investment in self as executive or engineer by keeping within the narrow circle of his own achievements, and never going out to observe the achievements in methods, principles and ideals of those who are cooperating and competing with him.

WHAT IS THE TAYLOR SOCIETY?

By H. S. Person[1]

I. GENERAL

1. The Taylor Society is an organization of executives, management engineers and others interested in ascertaining and promoting those administrative policies and methods of management necessary to meet changing industrial conditions, directly for the mutual benefit of its members and indirectly for the public welfare.

2. It is a cooperative endeavor to advance the habit of sound thinking (instead of snap judgments) concerning administrative and managerial problems, and the habit of solving specific managerial problems by the methods of science (instead of by casual imitation).

3. Its methods of promoting these ends are at present—

a. National meetings—usually three each year—at which are presented papers, committee reports and discussions of managerial problems of current interest and fundamental importance.

b. Meetings of local sections—monthly or bi-monthly—at which are presented papers, committee reports and discussions of interest and fundamental importance locally.

c. A bi-monthly Bulletin in which is put on permanent record for careful consideration the most important papers, reports and discussions of the meetings, and other special contributions.

d. A consultation and information service at its office in New York, where members may present their problems, secure information, be put in touch with other sources of information, receive introductions to firms which have solved similar problems, and secure such other assistance as is practicable at an organized center of information.

As the resources of the Society are increased this service to members will be expanded.

4. In its effort to make available for members the best things in administration and management, the Society searches for those things which are fundamentally sound and practicable, and attempts to avoid undue consideration on the one hand of petty details and devices and on the other hand of speculative theories which have only a remote bearing on current problems.

5. The Taylor Society is broad in its interests and seeks the proved best ideas and methods wherever found and from whatever source. Originally called "The Society to Promote the Science of Management," it changed its name after the death of Frederick W. Taylor to "The Taylor Society," as a tribute to the memory of the man who first awakened a general interest in management as a science and contributed most of sound principles and generally useful methods. But membership does not require that one be a "Taylor man" or represent a "Taylor plant." It means only that one is interested in management as a science, desires to promote investigation in that field, and is open-minded and appreciative of great contributions to the development of better management.

II. EDUCATIONAL WORK

6. The Society has become accustomed to look upon the work represented by meetings, the Bulletin, conferences and inquiries at the New York office, and answers to written inquiries, as educational work. A meeting, a number of the Bulletin, a conference, or a letter in response to an inquiry, which does not lead the listener or reader to a new practicable idea is considered a failure.

7. Major executives become so busy with the multitude of large problems pertaining to their operations that they do not find time to keep abreast of new developments in administration and management. Yet they realize that they should do so, for they must inspire and direct those who are responsible for the details of operations. These major executives need a stimulus, and a practical aid, to keep themselves informed. These the Taylor Society attempts to provide in meetings, a Bulletin, conferences at convenient times, and correspondence. The Society aims to give them, with a minimum of effort on their part, an answer to the question, "What are the latest worth-while developments in administration and management?"

---

[1] Managing Director, Taylor Society.

8. The minor executives and young men who have come into industry soon find themselves engaged in routine work and overwhelmed by the details pertaining to their tasks, and soon lose the habit of thinking about their problems in the large as well as intensively. They soon get into the habit of imitating, instead of creating, and of seeking superficial short cuts, instead of thorough investigation and thinking out their problems. They need a stimulus, and a practical aid, to help them avoid these habits. Meetings, the Bulletin, conferences and correspondence are intended to help the young men as well as the major executive.

9. The entire personnel of an institution, from major executive to the latest recruit, should be a cooperating group of individualities—cooperating, in the sense that each must play a part in a system of operations; individualities in the sense that each should be an original source of inspiration and new ideas, and a creator of new methods which fit and promote the work of the system. Too many institutions simply inbreed. Individuals lose their individuality and the organization loses its vitality. The greatest asset of an organization is not plant and equipment, cash in the bank, or even an organization of persons; but a spirit of cooperation, an atmosphere of live interest in the best management principles and practice, an *esprit de corps* of search for wiser policies and better methods, and individualities which have not lost the power of creation within cooperation.

10. What the Taylor Society calls its educational work is intended to help an individual and a firm to acquire this most important asset. It realizes that its efforts will be futile if it does not make its meetings and its publications compact with things fundamental and practicable which contribute to that end.

III. CONSULTATION AND INFORMATION SERVICE

11. But the Taylor Society strives also to serve its members in a manner more specific than is indicated by what it calls educational work. It aids in the solution of a member's concrete problems.

12. By this is not meant that the Society offers service which competes with or has the nature of the service of the professional investigator or consulting management engineer. It does not attempt to solve a member's problem in detail. Its assistance in this respect is rather advisory with respect to the scope of a problem, the fundamental management principles involved, and methods of its solution; and informational with respect to what others have done or are doing, what has been printed, and what special reports may have been made which would throw light upon it.

13. This work of the Society, like Topsy, has just grown. It was not laid out on paper and then built up; it has grown up from small beginnings and is now for the first time being laid out on paper. A few years ago a member dropped in to the office to talk over a problem; then another; then others. The office happened to have facilities for explaining things and securing information, the word was passed along, and members, as was their privilege, began to utilize the office of the Society in this way. At present a large part of the time of the executive officer is taken up by this work.

14. The nature of this service may be best indicated by a few disguised actual cases:

a. Mr. A, the proprietor-manager of a plant, was impressed at a meeting of the Society by the necessity of long-range planning of sales-production schedules. He came to the office of the Society and discussed the matter for nearly two hours, and secured helpful information concerning the methods and experiences of other firms.

b. Mr. B, the general manager of a plant, impressed by a committee report to the Society on sales planning, consulted the office concerning phases of the problem not covered in the report, received additional information, inquired about competent consultants, and has begun the development of sales planning in his business along sound lines.

c. Mr. C, the works manager of a plant, seeking a competent comptroller, conferred with the office concerning aspects of his problem, worked out in conference the specifications describing the man wanted, and secured the man through the office.

d. Mr. D, the consulting engineer of a French plant, called with a letter of introduction from a French member of the Society, received an explanation of the things worth observing in American management, had an itinerary worked out for him, and proceeded on his investigation with letters of introduction from the Society.

e. Mr. E, a minor executive in a plant, who had been assigned the task of investigating and reporting on stores control, called for information on that problem. He was given helpful information and saved false steps in starting work on the assignment.

f. Several minor executives engaged on methods work in various organizations, are in the habit of exercising membership privilege by frequently calling at the office of the Society to explain specific problems, present tentative plans of solving them, and ask for advice and criticism.

g. The works manager of a certain plant, confronted by the problem of the suitability for income-tax report purposes of an accounting system devised for purposes of operating control, secured valuable information through the office of the Society.

15. Such service as is illustrated by the above cases is possible for the reason that the Society, because of the nature of all its work, has to keep informed concerning the latest developments in managerial methods. It saves its members the trouble and expense of having to develop individually such centers of information.

IV. MINOR SERVICES

16. The Society endeavors to serve members in other ways; for instance, it conducts on behalf of members a specialized employment service and fre-

quently secures individuals of particular functional experience to fill positions requiring such special experience.

V. PROFESSIONAL—NOT COMMERCIAL

17. The Taylor Society is a professional, not a commercial, organization. It does not promote any particular interest. It undertakes no commercial work. Its object is mutual help within its membership. It does not charge a member a special fee for any advisory or informational service. Its sole source of income is from annual dues of members, a few non-member subscriptions to the Bulletin, and an occasional contribution.

VI. THE NEED OF A TAYLOR SOCIETY

18. There are two reasons why the educational and service activities of such an institution as the Taylor Society are worthy the active support of every executive of every enterprise in the United States. One is, the acquired characteristics of the American executive; the other is, the future of the managerial problem.

19. Thoughtful executives realize that their executive habits have been determined by past industrial conditions. These conditions have been those of a frontier community exploiting natural resources and serving a rapidly-growing population—operating in general under the conditions of a sellers' market. These circumstances have developed a particular type of executive—the forceful, acquisitive, go-getter type which drives straight to results regardless of methods and cost.

20. But while the forceful, go-getter type of executive will always be essential, managers have come to realize that an organization must be balanced by the inclusion of the thinking, investigating, planning type of executive who surveys conditions and tendencies, formulates precise plans, establishes schedules and budgets, keeps departments coordinated, maintains precise control of operations, has regard for efficiency and economy of methods, and all the time appraises progress and results in terms of plans. Even the go-getter executive, so useful in the early days of an enterprise, must become a thinking, planning executive after the enterprise is well established as a going concern.

21. The thinking and planning type of executive will play an increasingly important part during the next decade. The managerial problem of the future promises to be radically different from that of the past. The frontier conditions of a continual sellers' market, of emphasis on acquisition and go-getting without regard to methods and cost, are disappearing. Natural resources are generally appropriated; rapid increase of population by unrestricted immigration has been discontinued; wages are settling at a new high level; industry is equipped for large production; the development of a foreign market will remain an uncertain opportunity for a long time to come;—all signs point to a most intense competition to secure shares of the domestic market. Such competition as has been experienced in the past, has been only a *play* competition; *real* competition appears now to be ahead.

22. This competition will be between enterprises which command the same materials at approximately the same price, the same labor skill at approximately the same basic price, the same mechanical equipment at approximately the same price, the same go-getter executives at approximately the same price, and all will have access to the same social facilities of distribution at the same price. The differential between competing concerns which will give success in competition will be the new elements in management—superior analysis of industrial and market tendencies and conditions; superior long-time and short-time planning; superior budgeting and scheduling; superior cooperation between owners, managers and workers; superior selling and production methods; and superior periodic checking of progress and results.

23. To help every organization to incorporate into its established methods of management these new elements on which the future management problem will compel emphasis, is the object of the Taylor Society.

VII. HISTORY OF THE TAYLOR SOCIETY

24. *The Background.* In 1886 Henry R. Towne presented before the American Society of Mechanical Engineers the paper "The Engineer as an Economist," the first paper in America to consider management as an engineering problem. This was followed during the next twenty years by other contributions before the A.S.M.E., notably by Taylor's "A Piece Rate System" (1895), "Shop Management" (1903), and "On the Art of Cutting Metals" (1904); and by "The Present State of the Art of Industrial Management" (Majority Committee Report, 1912).

25. But the concern of that society with an increasing number of technical subjects did not permit expansion of its program to give that attention to management which importance of the subject required. A small group of its members therefore decided that a supplementary organization which could specialize on management was desirable.

26. *The Founding of the Society to Promote the Science of Management.* On November 11, 1910, half a dozen interested persons met at the Athletic Club, New York, to consider the matter. It was decided to organize a group for the discussion and promotion of scientific management. A formal organization was not effected, but from then on James M. Dodge, president of the Link-Belt Company, presided at meetings, and Robert Kent acted as secretary-treasurer. For two years, with such informal organization, some twenty or twenty-five persons met once each month, usually at Keene's Chop House, where management subjects of live interest were discussed.

27. Because of the increasing public interest in management, resulting from the Eastern Rate Case Hearings (winter of 1911-1912), it was decided to make the organization more formal and to make more of the Society. Accordingly a meeting was held at the Hotel Astor, November 7, 1912, and a formal organization effected. The Society was named The Society to Promote the Science of Management. James M. Dodge was elected president and Robert Kent secretary. Meetings were thereafter held less frequently (three times a year) but were more carefully planned. The place of meeting was usually New York, Philadelphia, or Boston. In 1913 H. S. Person, director of the Amos Tuck School, was elected president, and succeeded himself annually until 1919. In December, 1914, was begun the publication of a small journal for members, called the Bulletin of the Society to Promote the Science of Management. By 1917, when the United States entered the war, the membership had increased to about 110.

28. *During the War.* During the war the activities of the Society were held in abeyance, the officers and over 50 per cent of the members of the Society having been absorbed into the war organization on the United States.

29. *Reorganization and Change of Name to Taylor Society.* Immediately after the armistice in 1918, members of the Society in Washington and the vicinity held a meeting to consider the resumption of activities of the Society. It was felt that the Society should undertake more serious work, in view of the probable larger public service possible during reconstruction, and it was decided to establish a central office with a salaried executive. An office was established April 1, 1919, in the Engineering Societies Building, New York; H. S. Person was chosen the managing director, and John Otterson, Winchester Repeating Arms Co., was elected president. Mr. Otterson was succeeded in 1920 by Henry S. Dennison, Dennison Manufacturing Co., and Mr. Dennison was succeeded in 1921 by Richard A. Feiss, Joseph & Feiss Co., the present president.

30. In 1916 the name of the Society had been changed to Taylor Society, in honor of Frederick W. Taylor, the first to perceive a science in management, who had died in 1915.

31. Since the establishment of the New York office in 1919, the Society has grown to a membership of 802. While, during the past ten years, other similar societies have come into being and have disappeared, the Taylor Society has shown a remarkable vitality. This, perhaps, is because it has had a definite program of education and of service, has stuck to its last, and has not tried to spread out too thin; but more probably because its motive has been professional instead of commercial, and because its members have been inspired principally by what they could put into the Society rather than by what they could take out of it.

CERTAINLY, where human elements are introduced into a problem, scientific methods alone will hardly achieve a complete solution . . . Many concerns succeed because they have taken care of this human side of the problem, even though they lack scientific methods of procedure and exactness of information. Other concerns which expect to reduce management to an algebraic formula fail in the attempt because they neglect to foster growth and initiative in the working force . . . Truly *scientific* management takes account of both sides of the problem.—*James Mapes Dodge* (1911).

MASTER BUDGETS OF SALES AND PRODUCTION[1]

AT THE DENNISON MANUFACTURING COMPANY

By E. E. Brooks[2]

FROM several angles and because of several conditions the Dennison Manufacturing Company is able to be of service to other concerns which may be in very different branches of business endeavor. The character of our merchandise makes it possible for us to do more than an ordinary amount of experimenting without endangering our business seriously. We are fortunate in being able to make of ourselves a laboratory test as it were for the benefit of other concerns. If a manufacturer of clothing should try to put into effect in his plant some quite radical experiment he might possibly invite disaster, if the experiment should fail; whereas, we have so many items that the experiment can be made to cover some which are comparatively unimportant without endangering the whole structure. This applies with equal truth to experiments in production as well as experiments in selling.

In order to show the importance of budgets, it is necessary for us to give a fairly wide view of the organization. It is one of the peculiarities of the present subject that an explanation of the organization behind the budget makes the explanation of the budget almost unnecessary. It is really true that the forces which have given rise to the necessity for a budget are the complete explanation of the budget with the exception of its mere mechanical details. A certain warning is necessary in connection with the making of experiments. There are a good many people who expect an experiment to prove a thing that is in their minds before they start experimenting. It is highly desirable, however, that an entirely different point of view should be maintained if experiments are to give the greatest amount of benefit to the experimenters; and that is that one's mind should be entirely open to truth which may be shown by the experiment. Nearly every experiment will show us some new aspect of truth and in the enthusiasm over a new experiment human beings are prone to consider the new aspect of truth as all truth whereas it will certainly be but a very small part of it. One attitude certainly leads to dogmatism, whereas the other one leads to satisfying growth.

We also have a decided advantage over a great many concerns who make a comparatively small number of items, inasmuch as a lesson which we may learn from one set of items is very often applicable to a great many others which may be quite unrelated in general aspect. We try to plan our business so that all facilities may be employed to capacity at all times. But we also plan to have our employees sufficiently versatile so that if a depression should hit us from one direction it will be possible to absorb the workers in that department into other parts of the plant. We have not yet reached the millenium in this direction, but at least we are learning a good many things and are nearer it than we were a number of years ago.

Then, too, we feel that we are able to be of unusual service to other concerns because of the light of publicity which has been thrown in our direction during these last few years by reason of a very wide interest in our industrial partnership plans. Never before has there been so much interest manifested in plans which affect the relationship of employers and employees. We believe that we have a great deal to gain by careful working out of these plans, and that a very large part of this gain will come through the assumption of responsibility by the employees as a whole. The education of a large group of people is a thoroughly interesting as well as thoroughly worth-while proposition, even when that is measured in terms of dollars and cents.

We make a very wide variety of items—some 4,000 in all. Here are shoe tags about twenty inches square and silk-strung jewelry tags less than one-quarter of an inch square. Here are shipping tags in several colors and baggage checks as used by the railroads the country over. Here are marking tags of various kinds of which hundreds of millions are used, and various kinds of

---

[1] A paper presented at a meeting of the Taylor Society, New York, Nov. 24, 1922.

[2] Dennison Manufacturing Company, Framingham, Mass.

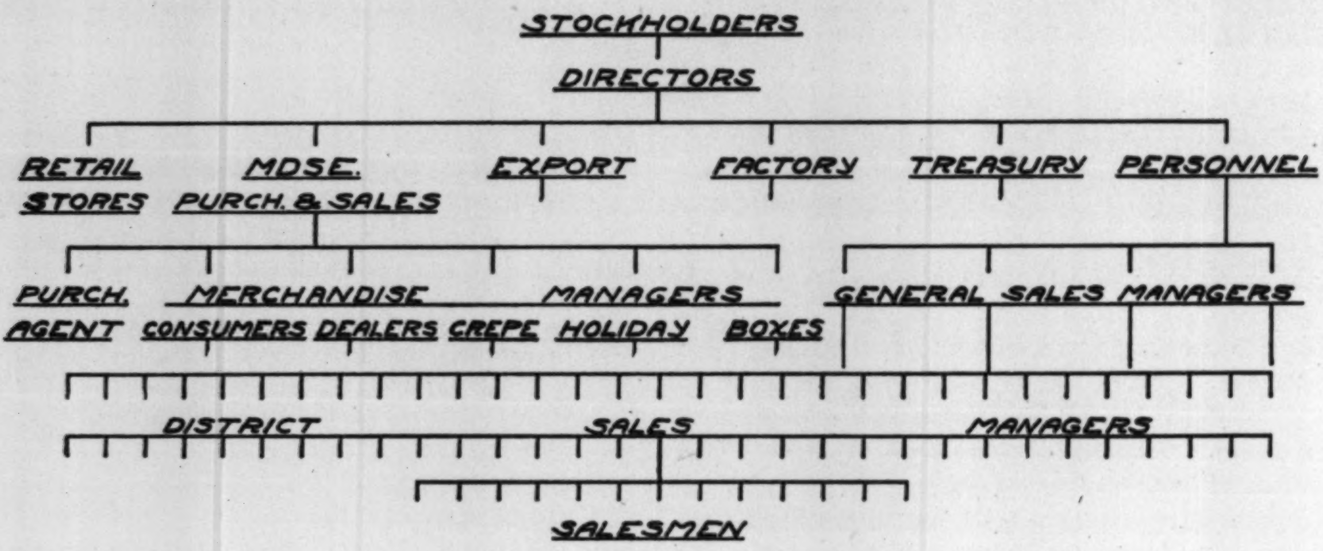


Chart I

gummed labels of which billions are used. Here are sealing waxes and crepe papers showing wide variety of colors and uses, with some few products which are made from the crepe paper such as napkins and paper covers. Here are Christmas and Hallowe'en seals and tags showing an application of the tag and label ideas in a direction that was an outgrowth of simpler forms after they had been in use for very many years. Here are sample pieces of cover paper as used by the Box Division where fine boxes are made for the jeweler and other high-class trades, and here also is a ring case made of fine leather which shows still another extreme angle of our many-sided business.

Most of these items are carried in stock in some form or other, and many thousands of other styles are made to order. Our 300 odd salesmen call on many classes of trade, of which the principal ones are: First, the dealers, such as stationers who buy our goods to sell again. These are the people to whom you would go if you wanted a small box of gummed labels or other Dennison item. Second, the consumers, the people who buy our goods to use. These include the jewelers who buy our boxes and cases in which to deliver their pieces of jewelry, the railroads and industrial institutions that buy our tags and labels for many purposes, and the vast bulk of merchants of whatever class who have occasion to use some of the many products which we manufacture.

It is quite easy to see that we have an intimate contact with the people who are actually using our goods. Not only do our several hundred salesmen keep us posted on anything new which they are able to think up, but we also have four retail stores in the largest cities of the country and from them we are able to get the point of view of the ultimate consumer in a much more intimate way than would be possible if we had to depend on the dealers' clerks. Our lines prosper as we keep ahead of the crowd. A suggestion, given while some woman is using our crepe paper in the fashioning of a paper hat, may easily be very much more to the point than a multitude of similar suggestions coming through a less intimate contact. This contact, which has made our crepe paper work possible and which has been the means of decorating a vast number of people and articles with items made from sealing wax, is constantly bringing new uses for old items or suggesting a totally new merchandise.

A simple chart of our organization (Chart I) will show the place of the merchandise managers, and this is the point of view from which this subject is being discussed. Our merchandise managers assume part of the duties which are ordinarily associated with sales managers. The other part of those duties is with us assumed by the general sales managers. The merchandise men have direct charge of the creation, production and sale of merchandise as such. Insofar as this same merchandise may require to be sold by salesmen, the general sales managers assume control of the salesmen, their traveling plans, etc., concerning themselves mainly with the dollars and cents aspect of sale rather than with the merchandise aspect. This plan allows our merchandise managers to give their undivided attention to the merchandise without having to concern themselves with problems of personnel.

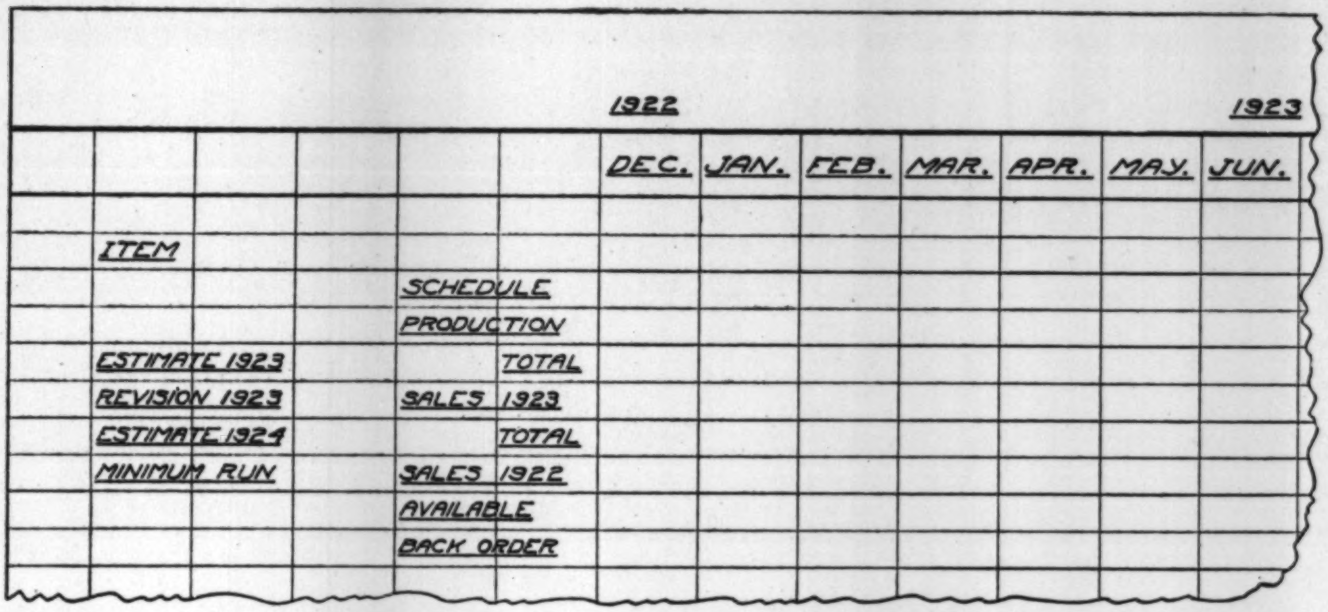


Chart II. Drawing of Section of Schedule Sheet

A few comments on our selling policies will help you understand the actual budgets when we come to them. We plan on a definite expansion of a certain per cent each year. In order to bolster sales in times of depression we try to launch new merchandise. When sales are easy we withhold the new ideas to save them for a time of greater sales resistance. We try to keep a reservoir of ideas so that a comparatively quick change in the general business conditions may be met from this reservoir. When sales lag in good times we put on extra efforts, perhaps conduct a sales campaign on certain items for which we have quite large facilities, or stage some variation of a selling campaign with dollars and cents sales as the predominating factor. Our salesmen are sufficiently keen so that we secure a very good amount of cooperation in such campaigns, as is proven to our satisfaction by a recent sales effort which in a limited amount of time gave us orders for 100,000,000 extra gummed labels of a certain variety. We try to anticipate the dull times by developing new merchandise for those times and also by developing salesmen. This last method is quite the opposite of that adopted by a great many concerns which try to add salesmen during good times when business is easy to get, and let their salesmen go during the dull times when business is hard to get. By following the opposite rule we are able to go into a dull time with a staff of salesmen who have been particularly trained to anticipate an abnormal amount of sales resistance. During the early months of 1920, at which time we were obliged to withdraw practically all of our salesmen because of an oversold condition of our factory, we correctly anticipated the business depression of late 1920 and early 1921, and in the Spring of 1920 added several dozens of new salesmen to our force and had them spend several months under the guidance of our senior salesmen in preparing themselves for the time which we felt sure was not far away when we would require every possible sale that could be made. As a result of this anticipation the depression which struck the company during the latter part of 1920 found us with an augmented and a trained sales force and we went through that year with an employment roll which at its lowest was a fraction over 96 per cent of normal.

With this background we believe that you can more easily understand the actual budgeting of our sales and products and may also grasp the technique of scheduling of items quite easily. We should emphasize the point that men of the selling organizations are directly in charge of our factory production and that this production is reviewed at least monthly, if not oftener. The schedule sheets (Chart II) will show you the mechanics and you should particularly notice the amount of information which is available to the one doing this scheduling. For each item in our line we have the sales by months of the previous year plus the estimate for this year: plus the sales per month and the total sales for this year; plus the production by months and the total production for this year. There is also

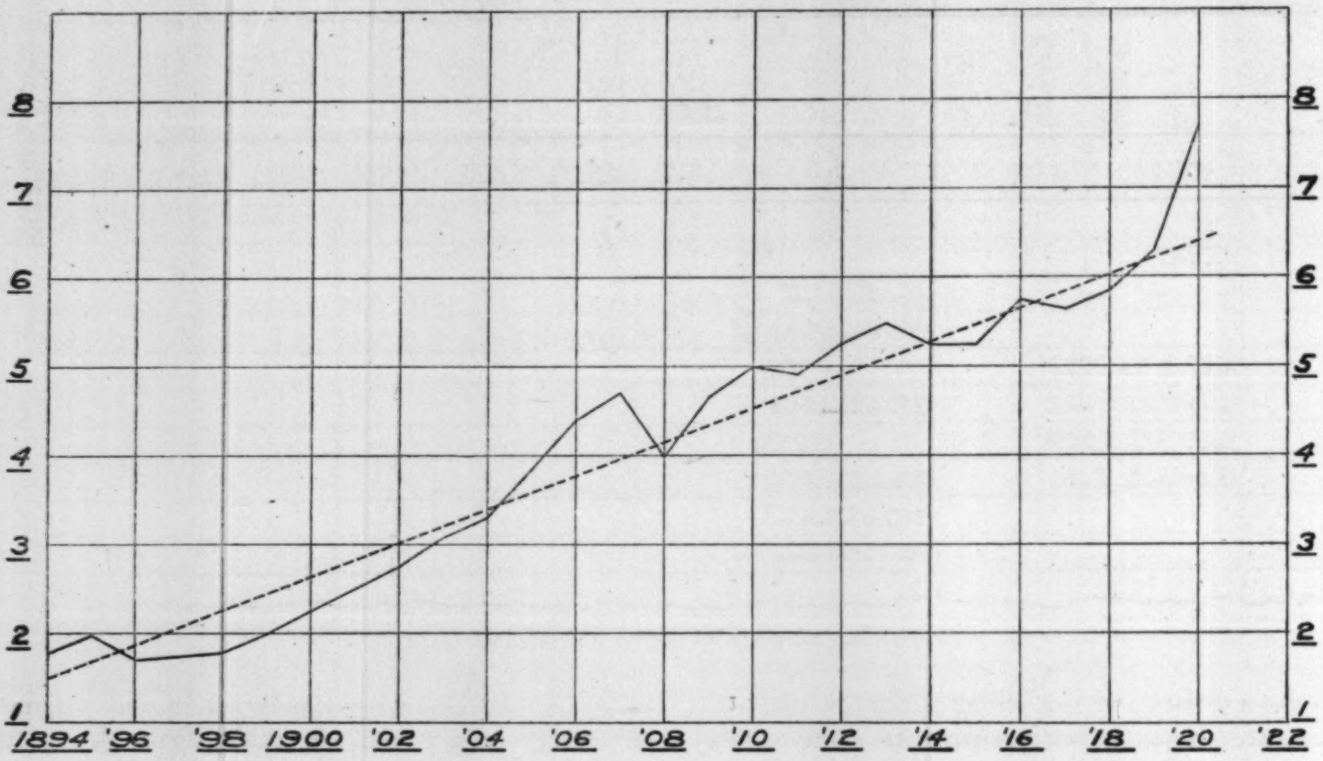


Chart III. Actual Growth Compared with Standard or Planned Growth

available, although not on this schedule sheet, the sales on these items over a period of a number of years. It is an interesting angle of this system that the individual items of a line seem to increase in almost exactly the same proportion. We may have a hundred silk-strung tags, for instance, and over a period of the last ten years, while the sales of the entire 100 may have varied 75 per cent from the sales of ten years ago, the individual sizes have not varied an appreciable amount from the general increase or decrease. This is true in so many directions that it can almost be taken as a rule for such items of merchandise. Our merchandise managers are so closely in touch with the sales of our items that such variations as may be pronounced will be discovered and either corrected or allowed for before the tendency to pile up stock or to run out of stock becomes serious.

In one important direction our problems are apt to differ from those of many other concerns. Our quotas on lines of merchandise are apt to be set by our producing ability. With us our production usually trails our sales because the market is far from saturated and our selling organization is able to find very many new or larger outlets for our goods. Our problem therefore is comparatively simple because our ability to produce is usually less than our ability to sell. Despite the fact that our merchandise is so widely distributed, we do not believe that we have come within appreciable distance of the law of limitations, and we are sure that the public could easily and painlessly absorb several times as much merchandise as we now make. Even though our facilities were much greater, we should still believe that there would be tremendous value in the setting of definite quotas because of the incentive to be derived from hitching to a star. The pages of the advertising journals, for instance, are constantly telling us stories of concerns which have apparently reached the limit of distribution and which suddenly awake to the realization that they have been overlooking altogether new and very wide fields of distribution. We have not yet reached a height where we are willing to admit that the horizon which we can see is the ultimate limit, and we believe that the limits which are set by most manufacturers are self-imposed limits and are set because of a lack of perspective plus a lack of analysis.

The monthly schedule sheet and the enlargement of one of the schedules (Chart II) will show you how we try to keep in very close touch with every item of merchandise. The enlarged schedule is filled in as it would appear on March 1st. On that date we revise the March schedule, if it is necessary to revise it; we revise the April schedule, if that is necessary; and we enter

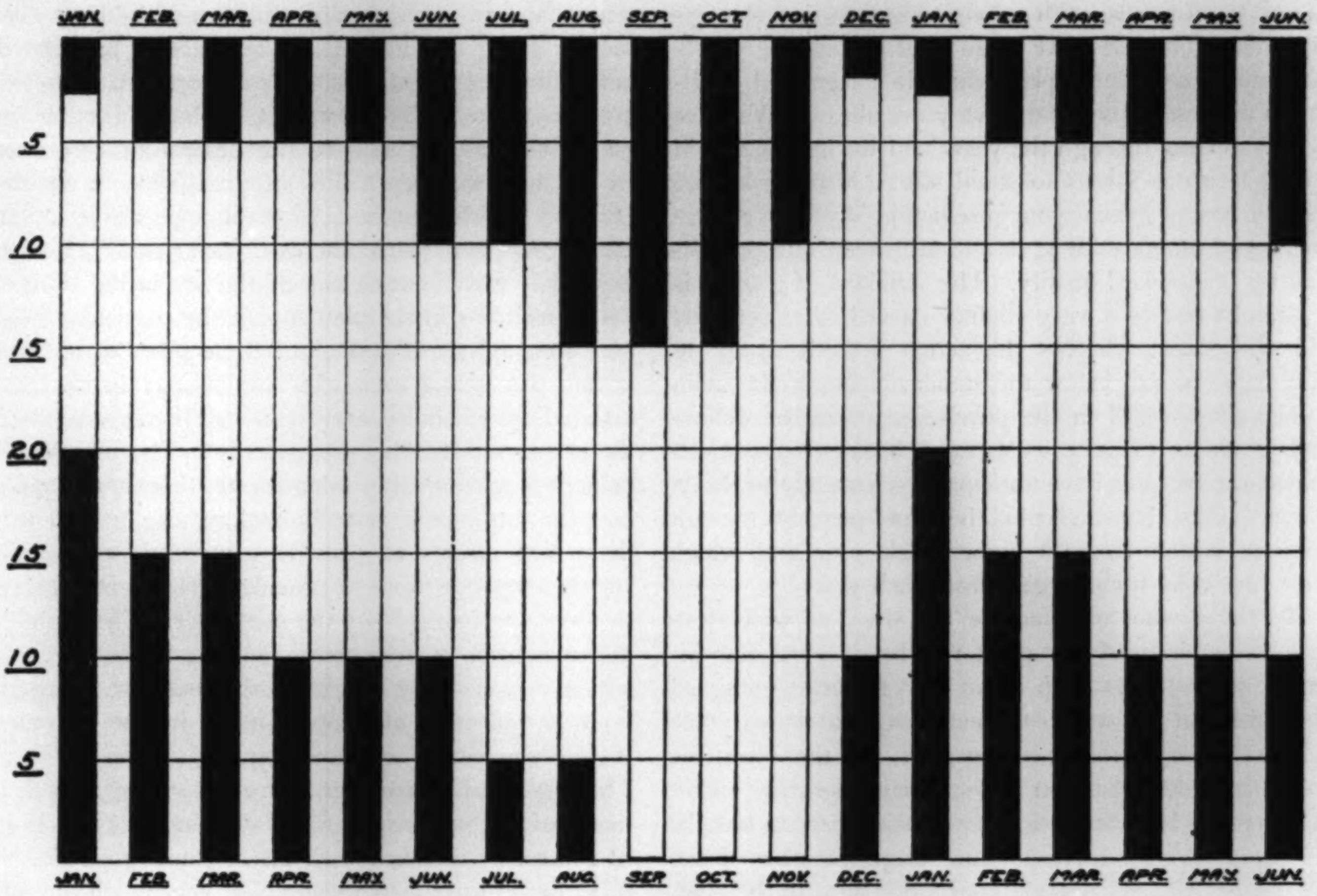


Chart IV

Box department. The bars at the top indicate the scheduling of facilities to produce for special orders; the bars at the bottom indicate the scheduling of facilities to produce stock items; the white space between indicates the scheduling of facilities to produce for the firm's use; thus the capacity of the department is utilized every month of the year.

the figures for May (on some items where there are intricate manufacturing processes we schedule for the third month ahead instead of the second). If there is any emergency, such as a sale out of all proportion to any previous records, a merchandise manager is able to consider it with the factory division superintendent without any delay, inasmuch as both men are at one place. Thus the best thoughts of the selling end and the producing end are immediately available for the consideration of any problem which may come up. These pages come to us for review at the beginning of each month, but if some condition should arise during the course of the month which would endanger our stocks, it would be reported at once and would be handled separately.

Back of the monthly schedule sheet is the yearly estimate, the figure of which, as it applies to each particular item, is entered in its proper space on the monthly estimate form. In one sense of the term we buy our goods from the factory just as customers do, and we are by no means certain but that the plan which we use would be of very great advantage to actual customers if they would only use it. In June of each year we are called on to estimate our sales on every item of merchandise for the following year and we give to the factory our best guess as to what they will be required to produce during the next year. If we expect to sell more than they are able to produce, they have ample time to secure new facilities, provided the directors will approve the order for those facilities. If the quantities that we anticipate selling are less than they are able to produce, we are notified to that effect, and we have a period of several months in which to plan sales campaigns or new items or to put into effect whatever may be necessary to bring the sales up to the production. You will understand that we are not content to set a mark for ourselves which is easy to reach. The sales quota for each important group of items should be in accord with a long-range plan of increasing sales. Thus we have to go back beyond the yearly estimate to consider a plan which has a general application over perhaps twenty-five years ahead. We have grown steadily through the years and we believe that it would be fatal for us to stand still. Also we believe that we cannot increase our production beyond a certain small percentage each year and still keep our production up to standard quality. The standard of growth is a straight line or a very slightly curved line, as Chart III will show, whereas the actual growth is apt to rise above or fall below the standard, due in the main to the rise or fall in the purchasing value of dollars and cents or to very widespread business conditions which we may not have anticipated accurately or fully. Nevertheless, the standard is there and provides us with a quota which becomes higher each year and which therefore calls for a larger effort each year.

To those who manufacture for stock as well as to order one phase of our plant will be of particular interest. We try to keep all of our facilities going all the time, but we sell to a good many classes of trade where there are decided selling peaks and these must be taken into consideration in our manufacturing plans. This results in a flood of orders during certain months of the year with corresponding drops at other times. We therefore try to develop our stock lines to the place where they will effectually balance the flood of special orders and Chart IV will show how we try to schedule the stock lines in comparison with the average flow of especial orders as it applies to the Box Division. Most of our boxes are sold to the jewelry trade, which is very highly seasonal. If we made only to order, we would have a tremendous peak during the Fall months and a corresponding valley after New Years. We have therefore developed our stock items so that during these otherwise dull months they can be used to keep every facility going at full time. The space in between the heavy lines representing stock goods and made-to-order goods is taken up by the making of boxes for our own goods such as are sold to the dealers or consumers. In this way we keep a flow of production in our Box Division which does not vary an appreciable amount except that it tends to increase each year. The same method is used in each one of the producing divisions with variations in the plan to suit the particular needs.

A tremendous advantage of these plans in operation is that the selling men who are directly in charge of sales of merchandise are also directly responsible for the production of that merchandise. The merchandise managers are midway between the consuming public and the employees actually making the goods, using their best efforts to provide continuous employment for the employees and to provide sufficient merchandise to meet the demands of the consumer. The merchandise managers may be compared to a telephone central which is constantly receiving requests for connection from a multitude of people and is just as constantly giving connection with an equally large multitude. The merchandise manager is in constant touch with the needs of the producing end of our business and is just as constantly in touch with the consuming public. You don't have to use your imagination very much to realize what happens when the telephone operator falls down on her job; inasmuch as the comparison is very close you can also realize what would happen either to the factory or to the consuming public if the merchandise managers were not constantly in touch with both. On our monthly reviews the slow sellers and the fast sellers are shown up with equal prominence, and while we have not attained a state of perfect bliss we feel that we have made some progress.

IN scientific sales management I would lay great stress on a more equal division of the responsibility between the salesman and the management. The management itself should take over all work now being done by the salesman for which it is better fitted than he. To do this I would create a central planning department for the salesmen. The work which this department does is called Sales Cooperation. It advocates making the salesman the closer and not the missionary. Using salesmen as missionaries costs too much money. Missionary work is one of the things which causes the million-dollar-a-day waste in selling America's goods.

—*Charles W. Hoyt* (1912).

AN ANALYSIS OF YOUR BUSINESS[1]

By You

The Purpose of the Experiment—The purpose of this questionnaire is to enable the responsible managing executive to rapidly survey his business and determine for himself its strength and its weakness. Each question indicates a point in management technic which has met with approval by the most successful companies in the country. Probably no company will be found which consistently does all of these things and, on the other hand, it is doubtful if any company is to be found which consistently ignores them all. Certainly, however, those companies who really perform in an understanding and thorough-going manner a large percentage of the things covered will be found to rank among the best organized and those who do only a small proportion of them will be found to rank among the most poorly organized.

The mere fact that a company makes money is no indication that it is well organized, though it is rare for a well-organized company to consistently lose money. It is evident that a poorly managed company which is making money could make much more by better organization.

This method is equivalent to an "analysis by sample" as firms who practice the technic implied by the questions have other good practices in proportion, for it denotes a thorough knowledge of management. The converse is also true.

Thirty-five of these questions were adapted from the report of the Hoover Committee on The Elimination of Waste in Industry. These are marked with an asterisk (*). Inasmuch as the work of this committee did not cover all of the phases of management it has been necessary for our purposes to add other questions.

Method of Rating—The method of rating in a case of this kind must of necessity be arbitrary. No claim is made that this method gives an accurate estimate. It is admitted that accurate measurement would require a different weighting for each subject. This weighting could not be standardized successfully. It would be different with each industry and could only be satisfactorily done by a trained industrial engineer making an analysis and survey of the business in question. The reader is advised therefore, to use the following arbitrary method of rating which has the merit, at least, of enabling one to compare his company with a hypothetical company having the maximum number of points:

Excellent	If you do or have the thing implied by the question, place before it	5
Good	If you think you have a reliable substitute mark it	4
Fair	If you have commenced to install but it is not yet in operation, mark it	3
Poor	If you haven't been doing it mark	2
Bad	If you are not acquainted with the plan, mark	1

The total number of points possible is 415

A. ORGANIZATION

An organization is "a collection of persons working together for a common end." Many so-called organizations are but "a collection of persons." In order that these persons may work together for a common end it is necessary that the duties of each be carefully defined and outlined. Best management practice requires that this be in writing and preferably graphically.

Questions:

1*.... Have you an active, up-to-date organization chart?

2*.... Is your organization built up functionally rather than around individuals?

3*.... Are the duties of each unit function or member of the organization contained in writing?

4*.... Are there standard written instructions as to how each function is to be performed?

5..... If you have the above-mentioned conditions, do they represent actual present practice?

Total possible points 25

Your standing ....

B. PERSONNEL

The proper selection of employees and due consideration of their needs after employment, in the best organizations, are now considered to be problems of major importance. The following requirements represent the absolutely essential elements of good personnel practice.

1*.... Are employees selected by one person or department?

2*.... Is any evidence of ability required on hiring?

3*.... Do you keep records of discharges and layoffs and tabulate the causes?

4*.... Are incompetent workers given training or tried at other work before discharging?

5*.... Are quits followed up and investigated and the causes tabulated?

6*.... Are records kept up as to quality and quantity of production of worker?

---

[1] From an address by W. H. Leffingwell, The Leffingwell-Ream Co., New York and Chicago, at the Management Week joint local section meeting, Chicago, Oct. 20, 1922.

7*.... Are workers trained under competent functional instructors as to best method of performing work?

Total possible points 35
Your standing ....

C. MANAGEMENT BY FACTS

Elbert Hubbard said "an executive is a man who makes quick decisions—and sometimes he is right." Management by hunches is rapidly becoming a thing of the past. The best managers today need judgment as much as they ever did, but this judgment should be reserved for the problems regarding which it is either too difficult or too expensive to get the facts. There will always remain an ample supply of such problems, no matter how eager the search for facts. But wherever facts can profitably be found, they remove many of the complications of management and make success more certain. Getting the facts is either a statistical or a scientific process, or both, which the busy executive cannot do "in his spare time." Frederick W. Taylor said: "the science which underlies each act of each workman is so great and amounts to so much that the workman who is best suited to actually doing the work is incapable of fully understanding this science." Management by facts deliberately and systematically sought is responsible for the greatest successes in modern business.

Questions:

1*.... Is there a Research Department for products, materials or methods?

2*.... Have you a cost system tied in with your financial books?

3*.... Do you regularly compare production performance with production standards?

Note—One of the greatest hidden wastes in industry today is the vast number of small periods of idleness of machines and workers.

4*.... Have you a record of Idle Machine time, with causes tabulated?

5*.... Have you a record of Idle Workers with causes tabulated?

Total possible points 25
Your standing ....

D. UPKEEP

Another great source of waste is the lack of proper maintenance of equipment and plant. In many companies the upkeep is left almost entirely to the workmen.

Questions:

1*.... Have you an equipment inventory?

2*.... Have you a separate maintenance department?

3*.... Is equipment subjected to periodical inspection?

4..... Are records made of breakdowns, with causes tabulated?

Total possible points 20
Your standing ....

E. STANDARDIZATION

Things all alike are not necessarily standardized. A standard is a unit of comparison, something accepted for the time being as a goal to be reached. Standardization, therefore, presupposes careful scientific investigation. Hoover says that lack of standardization is costing industry of this country an annual loss of "not millions, but billions of dollars."

Questions:

1*.... Has any systematic attempt been made to standardize product?

2*.... Are tools standardized?

3*.... Have more than 25 per cent of your operations been standardized by scientific time and motion study?

4*.... Is raw material purchased by standard specifications?

Total possible points............. 20
Your standing ....

F. PURCHASING

Years ago the heads of departments and foremen did much of the buying. Even today the buying function in many companies is not centralized. In some companies there are few reliable standards to follow, yet purchasing is rapidly becoming a science. One company using a large quantity of a special lubricating oil decided to adopt the scientific method. They first determined what qualities they needed. Then they made a laboratory test and of the 13 brands on the market found only one satisfactory.

Questions:

1*.... Do all purchases clear through a Purchasing Department?

2*.... Is raw material subjected to test upon receipt?

3*..... Have you a perpetual inventory showing all stock receipts, issues and returns and a balance on each item?

4..... Do you have maximum and minimum limits on each item?

Total possible points 20
Your standing ....

G. PLANNING

Pre-planning production is a major function which is greatly neglected in many companies and its neglect is a source of great waste.

Questions:

1*.... Is the function of Planning Production centralized?

2*.... Have you an up-to-date layout plan of your plant?

3*.... Have you a budget of anticipated sales and production?

4*.... Are there drawings covering all products?

5*.... Are there material lists covering all products?

6*.... Are standards of performance available from which work is planned?

7*.... Are there written standard instructions for each operation?

8*.... Are there records showing stock on hand and available?

Total possible points 40
Your standing ....

H. TRANSPORTATION

Often material must be handled between each operation in the plant. This is the source of much waste. Mechanical means are available for almost every material-handling problem.

Questions:

1*.... Are more than 25 per cent of the material handlings mechanically transported?

2.... Has plant layout been scientifically studied to avoid back-travel and needless handling?

Total possible points 10
Your standing ....

I. FINANCIAL

The financial affairs of a company are dependent upon many factors and scientific planning and forecasting is rapidly replacing the old habit of meeting the emergency by the best available method. The following questions indicate minimum requirements for well-managed companies.

Questions:

1.... Is there a budget of expenses, separated by departments?

2..... Are seasonal requirements well understood and provided for by adequate reserves?

3.... Are adequate reserves set up to meet unforeseen contingencies?

4.... Is there an organized credit system working with standard credit policies in writing?

5.... Is there an organized collection system with standard written policies?

6.... Are cash discounts taken?

7.... Do you issue periodical financial statements to your banker?

8.... Have you an established line of credit at your bank?

9.... Do you periodically pay up all outstanding notes?

10.... Are your financial books audited by a recognized public accountant at least four times a year?

Total possible points 50
Your standing ....

J. SALES

In no other activity of business in general is there so much waste as in selling. It has been thought until recently that selling was not subject to scientific analysis but the experience of many of the most successful companies shows that even greater possibilities of the elimination of waste exist in selling than exists in production. For example, the automobile industry. It costs much more to sell than to produce an automobile.

Questions:

1.... Have you a sales manager?

2.... Have you a standard price list of your product?

3.... Have you in writing, all of the uses of your product?

4.... Have you made a survey of your market possibilities?

5.... Have you a standardized plan of remuneration to your salesmen, etc.?

6.... Have you standardized sales methods?

7.... Have you a sales manual?

8.... Are salesmen given a period of intensive training?

9.... Do you predict sales by establishing quotas for salesmen and districts?

10.... Do you have a monthly comparison of sales anticipated and actual sales made?

11.... Have you a record of sales lost and the probable reasons therefor?

12.... Do you make a systematic record of complaints classified as to causes?

Total possible points 60
Your standing ....

K. ACCOUNTING

Every business of any standing keeps books of some sort and has at least the rudiments of an accounting system. But not every company makes the most use of modern methods of accounting. Unless the accounting is more than a mere historical record it is not functioning fully. Your accounting system should serve as a barometer.

Questions:

1.... Do you have a statement of your net worth at least four times a year?
2.... Do you have a daily report of cash received from various sources, cash paid out for various purposes and balance on hand?
3.... Do you have a daily report of total sales classified by commodities or territories or both, compared with a corresponding period in previous years?
4.... Do you have a weekly (or more often) report of purchases classified by commodities?
5.... Do you have a weekly report (or more often) of overdue accounts receivable?
6.... Do you have a monthly (or more often) statement of profit and loss?
7.... Do you have a monthly (or more often) statement of quick assets and liabilities?
8.... Do you have a monthly (or more often) statement of expenses divided departmentally or otherwise classified and compared with a corresponding period in previous years?
9.... Do you have a weekly (or more often) forecast of cash that will be required?
10.... Do you have a weekly (or more often) forecast of cash that will be received?

Total possible points 50
Your standing ....

L. CLERICAL

The Office, though not a major department in most businesses, nevertheless furnishes clerical service to all departments. Business today is impossible without clerical service. The importance of the clerical function as a factor in the smooth working of business is not fully realized by many companies.

Questions:

1.... Are all clerks under central management?
2.... Have you an active, up-to-date office manual describing routines?
3.... Is the work of more than 25 per cent of your clerks measured and individual outputs recorded?
4.... Have you standard practice in writing describing the methods for performing more than 25 per cent of the detailed tasks?
5.... Have you an up-to-date layout plan of your office?
6.... Are the major routines planned so that work travels from desk to desk, always in a forward direction?
7.... Have you a central filing department?
8.... Have you a central stenographic department?
9.... Have you established standards of output by scientific time and motion study for more than 25 per cent of your operations?
10.... Are clerks trained to their tasks by a functional instructor?
11.... Are there standardized ranges of salaries for the various clerical positions?
12.... Do you have any incentive plan of payment for output done, other than straight salary?

Total possible points............. 60
Your standing......................

SUMMARY

To find the weak spots in your organization divide each item in column 2 by the corresponding figure in column 1 and enter the percentage figure in column 3.

To find how your organization as a whole compares with the hypothetical standard, divide the total of column 2 by the total points shown in column 1 and enter the percentage figure in column 3.

Subjects	1 *Total Possible Points*	2 *Your Standing*	3 *Percent of Possible Points*
A. Organization	25	.....	.....
B. Personnel	35	.....	.....
C. Management of Facts..	25	.....	.....
D. Upkeep	20	.....	.....
E. Standardization	20	.....	.....
F. Purchasing	20	.....	.....
G. Planning	40	.....	.....
H. Transportation	10	.....	.....
I. Financial	50	.....	.....
J. Sales	60	.....	.....
K. Accounting	50	.....	.....
L. Clerical	60	.....	.....
Total possible points..	415	.....	.....

RELATIVE WEIGHTING

It is admitted at once that certain of the above mentioned classifications are of more importance than others but taking each classification by itself it is not important what number of points are given. For example, the total number of possible points under organization is 25 and if your standing is 20 your percentage standing is 80. The total number of possible points under Clerical is 60, and if your standing is 45, your percentage is 75.

IF ALL OF THE SUBJECTS DO NOT APPLY

Following the same reasoning mentioned in the preceding paragraph, if all of the classifications do not apply to your company, by taking those that do apply and figuring the relation between the total possible points and your standing you can determine your percentage just the same. It is not important that all of the twelve items be considered.

REMEDIES FOR UNEMPLOYMENT

By J. D. Hackett[1]

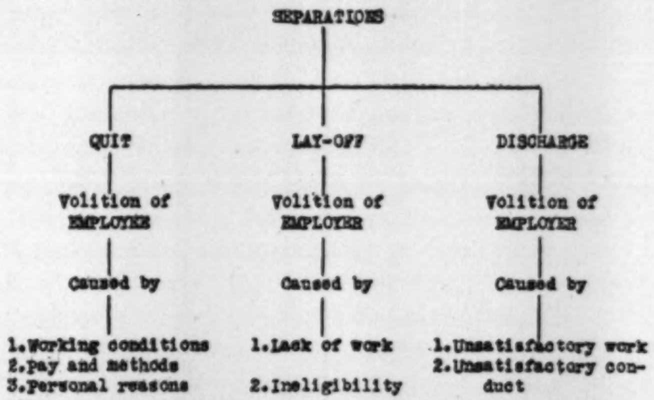
IN the Bulletin of October, 1922, Mr. H. Feldman calls attention to the value of improved factory management in the reduction of unemployment, and also to the "remarkable effective provisions of the Huber Bill in Wisconsin," for unemployment insurance. He aims to show that the American tendency is wisely towards prevention of the evil while the drift of English policy is to relieve, rather than to prevent, unemployment by means of compensation.

The control of unemployment, Mr. Feldman maintains, depends on regularization of the productive schedule in the individual plant, and he supports his contention by instancing quite a remarkable achievement in the Hills Brothers Company. No information is given as to the effect of this regularization on labor turnover, but one may assume that it is beneficial although turnover always exists to some extent. It may be presumed that the employer who sees the necessity of maintaining production is somtimes prompted to do so by his effort to improve labor conditions.

Centralized employment or personnel management is, of course, a necessity in the reduction of unemployment. It is now becoming general in well managed plants; its methods are crystallizing and we are thus coming to discern the nature and extent of turnover and the elements of which it is composed.

Before discussing "Separations" and their bearing on the problem of unemployment and insurance it will be necessary to determine what is meant by the term. A "separation" may be defined as a "cessation of employment by the individual, from whatever cause," involving no right of reinstatement as in the case of absence. There are three classes of separations constituting turnover-quits, lay-offs and discharges, each one of which bears a significant and different relation to unemployment insurance. These differences may be seen by a glance at the accompanying table:

TABLE SHOWING THE COMPONENT ELEMENTS IN SEPARATIONS FROM EMPLOYMENT TOGETHER WITH THE RESPONSIBILITY AND CAUSE



A "quit" is a voluntary separation from employment by the worker. A "lay-off" is a separation from work, at the instance of the employer, due to no fault of the worker. A "discharge" is a separation, at the instance of the employer, because of unsatisfactory work or conduct on the part of the worker. These distinctions have a vital importance in the whole question of unemployment insurance.

The Huber Bill aims to compensate a workman, provided (1) he has worked six months for one or more employers under the act; (2) he has made application in the proper manner; (3) "he is *capable* and *available*, but unable to obtain suitable employment."

The bill (House No. 278) introduced in the Massachusetts legislature, Jan. 5th, 1922, by Representative Shattuck, provides for "payment to employees during periods of involuntary unemployment," while Mr. John F. Fitzgerald, the Democratic nominee for Governor of Massachusetts, favors unemployment insurance, "because, through no fault of their own, people find themselves unable to go on with their work."

"Under the Cleveland Plan, each manufacturer guarantees to his regular workers who do not leave voluntarily and are not justifiably discharged, twenty weeks of work during each half year," according to William J. Mack, the Impartial Chairman of the Ladies' Garment Industry of Cleveland.[1]

---

[1] Consultant on labor problems, New York.

[1] American Labor Legislation Review, March, 1922, p. 27.

It will be seen that these plans, while insuring all employees, limit the benefits to certain classes of employees. Taking the Huber Bill first, we come to examine the limitations imposed by its provisions. To be eligible a man must be "available" as well as "capable." If the worker quits, he may be capable but he is not available and is, therefore, excluded. If he is discharged he is available but not capable and, therefore, he is also excluded. Apparently, then, it is only those laid off, being both capable and available, who are entitled to share the benefits of the unemployment insurance act of Wisconsin. This is further clarified because disqualification ensues "When an employee has lost employment through his own fault (Discharge) or voluntarily leaves his employment without reasonable cause ... (Quit)."

The proposed Massachusetts bill is slightly different. It seems to include, by its terms, discharges as well as lay-offs, since the bill provides for "payment to employees during periods of involuntary unemployment." A discharged man is, of course, involuntarily unemployed.

The question now arises: what is the relative percentage of quits, lay-offs and discharges? What is their relative variation in normal and abnormal periods of the business cycle? Before examining these questions it must be pointed out that, since employment management has not yet reached the dignity of a standard terminology, all figures pertaining to turnover must be accepted with caution.

There is the widest variation in the use of turnover terms. It is not uncommon, for instance, to find a lay-off described as "A discharge because of shortage of work," "A temporary dismissal" or "The dismissed force." The term, lay-off, is wrongly applied to "Inefficient workers who must be laid off for good," and to "Employees laid off who were persistently indifferent."

Accepting the ordinary meaning of the above terms and taking four factories whose figures are available for the years 1913, 1914, 1915 and 1916, we find that separations amounted to 77,308, 14,587, 10,903 and 37,925 respectively, giving a total of over 140,000 separations.

These figures have not been selected to prove a point. They were compiled in relation to turnover and not to unemployment insurance and happened to be the only available ones for the years in question. There is no claim that they represent either present or typical conditions but they show the relative proportion of the three classes included in the term "separations" and, therefore, their bearing on the limitations imposed by the Wisconsin and Massachusetts bills. They may be summarized as follows:

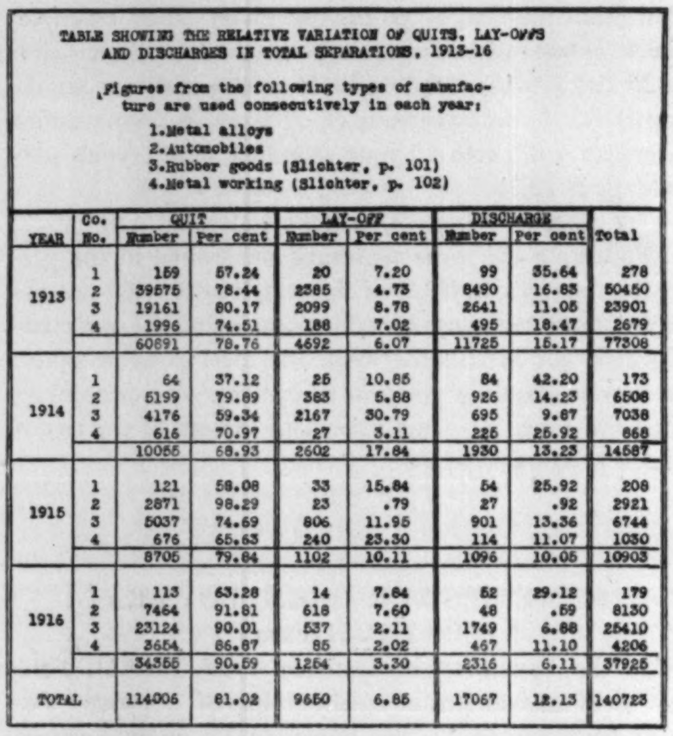


TABLE SHOWING THE RELATIVE VARIATION OF QUITS, LAY-OFFS AND DISCHARGES IN TOTAL SEPARATIONS, 1913-16

Figures from the following types of manufacture are used consecutively in each year:

1. Metal alloys
2. Automobiles
3. Rubber goods (Slichter, p. 101)
4. Metal working (Slichter, p. 102)

YEAR	Co. No.	QUIT		LAY-OFF		DISCHARGE		Total
		Number	Per cent	Number	Per cent	Number	Per cent	
1913	1	159	57.24	20	7.20	99	35.64	278
	2	39575	78.44	2385	4.73	8490	16.83	50450
	3	19161	80.17	2099	8.78	2641	11.05	23901
	4	1996	74.51	188	7.02	495	18.47	2679
		60891	78.76	4692	6.07	11725	15.17	77308
1914	1	64	37.12	25	10.85	84	42.20	173
	2	5199	79.89	383	5.88	926	14.23	6508
	3	4176	59.34	2167	30.79	695	9.87	7038
	4	616	70.97	27	3.11	225	25.92	868
		10055	68.93	2602	17.84	1930	13.23	14587
1915	1	121	58.08	33	15.84	54	25.92	208
	2	2871	98.29	23	.79	27	.92	2921
	3	5037	74.69	806	11.95	901	13.36	6744
	4	676	65.63	240	23.30	114	11.07	1030
		8705	79.84	1102	10.11	1096	10.05	10903
1916	1	113	63.28	14	7.64	52	29.12	179
	2	7464	91.81	618	7.60	48	.59	8130
	3	23124	90.01	537	2.11	1749	6.88	25410
	4	3654	86.87	85	2.02	467	11.10	4206
		34355	90.59	1254	3.30	2316	6.11	37925
TOTAL		114006	81.02	9650	6.85	17067	12.13	140723

	No.	Per Cent.
Quit	114,006	81.02
Lay-off	9,650	6.85
Discharge	17,067	12.13

These figures show that, assuming quits and discharges are excluded from the benefits of the Huber Bill, only 6.85 per cent of those who leave employment would be entitled to unemployment insurance, disregarding for the moment other factors which would reduce the percentage still further. Under the provisions of the proposed Massachusetts Bill, which seems to include discharges, 18.98 per cent would be included. In the case of lay-offs there is a maximum of 30.79 per cent and a minimum of 2.02 per cent in these four years. Figures, however, for the last two years and nine months in a single plant, compiled to the end of September, 1922, show 71.87 per cent quit, 12.16 per cent lay-offs and 15.97 per cent discharged, in a total of 2,261 separations.

There remains to be considered how this small percentage of those entitled to unemployment insurance are affected by the other disqualifying provisions of the Huber Bill. "A man must have worked for six months under one or more employer under the act." This excludes farm laborers who enter the industrial field, apprentices and other youths who are breaking into industrial work but the percentage of which is unknown. Moreover, none of those laid off shall be eligible for insurance until after three days of unemployment have elapsed. There is, of course, no means of knowing what percentage these uncompensated days will constitute of the total days of unemployment.

Important deductions may be made from the foregoing. Since only about 6 per cent of the total separations are lay-offs the Huber Bill can have little effect in reducing unemployment. In any case it is quite clear that "Unemployment Insurance" is not a suitable description of the Huber Bill; it had better be called "Lay-Off Compensation" which, besides being a less pretentious and terrifying name, more closely describes it.[1]

In view of the above facts it appears that, in their present form, unemployment insurance bills can have little effect on the unemployment problem. The main point of the unemployment situation is that the American trend is to go as you well please, carefully avoiding the English example which is condemned as unsuitable for American conditions. American employers generally fight unemployment insurance vigorously and will continue doing so without taking any drastic steps to avoid the condition which brings insurance within the range of practical politics. It is apparent that few have taken the trouble to see what these bills involve. The name "unemployment insurance" is enough to condemn it in their eyes. But the real way to avoid it is to make it unnecessary by the better regulation of industry.

UNEMPLOYMENT COMPENSATION PLANS AND LABOR TURNOVER

By H. Feldman

MR. HACKETT'S discussion is a helpful addition to the kind of detailed criticism which current proposals for unemployment compensation need. The opportunity to comment on his paper, however, has allowed for calling attention to certain important aspects of the problem which his statistics suggest, but which he does not mention.

The gist of Mr. Hackett's contention is that the number of lay-offs is so much smaller than the total number of separations that a bill of the Huber type "can have little effect on the unemployment problem." An attempt will be made to show that Mr. Hackett has underestimated the possible effects of the Huber bill. But it is necessary to observe that by introducing a comparison between lay-offs and the total number of voluntary separations, he confuses the nature of the evil at which the Huber Bill aims. It was not intended to provide for the persons who quit voluntarily to get married, to get better jobs, to go into business, to retire, to travel, etc., but was directed against that kind of management which is not keenly sensitive to the human tragedies involved in throwing loyal and efficient workmen out of work. Labor turnover is an important feature in the problem, as will be indicated later, but we shall have obstacles enough in getting any form of social compulsion to bear on the greater evil of reckless hiring and firing to make it very desirable to keep the major social issue clear.

Confining our attention to the actual number of lay-offs, would the penalty under the Huber Bill have been effective in inducing the business firms cited to become interested in eliminating the kind of practices which make for drastic reductions in forces? Mr. Hackett's figures show that only 9,650 were classified in the lay-off column. But he does not call attention to the fact that this classification was an arbitrary one, and that many in the discharge column belonged with those classified as lay-offs. In times of depression executives, and especially foremen, become unduly critical of their workers, and discharge of workmen on grounds of inefficiency, insubordination, etc., is often unjustified. In a very efficient firm, a foreman recently discharged some of the most highly-paid employees on the ground of "not being worth their pay," in order to cut down the expense of his department, retaining others less capable but working at lower wages. Under the Huber insurance plan all discharges are subject to review by an impartial referee, and if such an insurance officer could review the cases of those in Mr. Hackett's statistics, a substantial readjustment of the number of lay-offs would not be unlikely. Another fact that any insurance bill will necessarily have to consider is the extent to which workers are on part-time, but there is no such thing as part-time discharges or part-time quits. Furthermore, Mr. Hackett has not even suggested the possibility that the very provisions of the Bill which bar compensation until an employee has been with the firm for six months would operate as an inducement to workers not to quit, and thus reduce the number of separations in the first column of his table. Since, after the transition period, the employee would be entitled to one week of unemployment compensation for every four weeks with the firm, up to thirteen weeks' compensation, it must be admitted that this benefit would operate to some extent in reducing labor turnover.

---

[1] "Lay-off Compensation," Industrial Management, July, 1920.

As the compensation paid a workman laid off would be $6 a week, and the maximum time thirteen weeks, an employer who laid off an employee would assume a possible liability of $78. Mr. Hackett shows that the disqualifying features of the new law would make the number of persons eligible for compensation in the four firms less than the 9,650 laid off, but in view of the considerations presented there are additions to counteract some of the subtractions. Let us assume for the sake of discussion, that 8,000 employees laid off would be entitled to compensation, and even if the estimate is unjustified it will not seriously affect the argument.

On this basis, the 8,000 lay-offs present a maximum liability to the employers of $624,000. Would the prospect of the payment of a considerable portion of this liability have operated as a direct stimulus to more conservative policies and better management technique? Would not the firms have been more interested in personnel administration and more inclined to listen to outside specialists—as they have been under the workmen's compensation laws? If not, consider the case of one organization which laid off more than two-thirds of its workers,—mostly long-time employees—early in 1921; or the U. S. Steel Corporation, whose annual report for last year tells us that the number of employees on the payroll in July, 1921, was 106,000 less than the number in January.[1] Mr. Morris L. Cooke was kind enough to send the writer a reprint of an article he wrote some time ago, in which attention is called to the frequent changes in standard production among firms whose experience Mr. Cooke has observed. "A remarkable instance," Mr. Cooke writes, "is an eastern locomotive building concern which on two occasions within the last ten years has laid off more than 75 per cent of its force almost over night. On January 1, 1908, this concern employed over 19,000 men and six weeks later had less than 8,000 working half time."[2] Would Mr. Hackett say that the liability of having to pay up to $78 per person laid off or on part-time would not have been an important factor in the minds of those controlling this concern?

The Huber Bill could be considerably improved in detail, no doubt, but its main provisions would be effective because the penalization of planlessness would emphasize the need for better management and would make the wastefulness of irregular employment a large factor in the money economy by which business is motivated. The Huber Bill puts a direct tax on haphazard management.

As mentioned at the beginning, one significant aspect of Mr. Hackett's statistics was not pointed out. Peculiarly enough, it has received scarcely any mention in the discussions of unemployment insurance. This factor is the great advantage which the firm with high turnover has over the firm with low turnover under a system of unemployment compensation which penalizes only lay-offs. For if a decrease of forces becomes necessary in a firm with high labor turnover (which, let us assume, is an inefficient firm), all that the management need do to reduce the payroll is to stop hiring, and the normal turnover will take care of the reduction. Such a firm might even make itself disagreeable by reducing wages and increasing hours, etc., and thus accelerate the rate at which employees leave their jobs. But if a decrease of forces becomes necessary in a firm which is efficient and has a low turnover, its employees would probably hang on, and a lay-off that would involve considerable expense in unemployment compensation might become necessary. To illustrate how serious this might be in a concrete instance, consider the following facts which appear in the article by Mr. Cooke previously mentioned, concerning the improvement of the turnover record of the Joseph & Feiss Company, of Cleveland, during the years 1910-1914.

	Standard Pay Roll	*New Hands*	*Per cent*
1910......	1,044	1,570	150
1911......	951	807	85
1912......	887	663	75
1913......	854	569	66
1914......	825	290	35

Here we see that in 1910, before the firm had put in practice its exceptional technique, the turnover was 150 per cent, or an average of 12½ per cent a month, while in 1914 the turnover had become as low as 35 per cent or 3 per cent a month. Under the former system a considerable reduction in forces could have been arranged for easily through normal turnover without the need for lay-off compensation, while under the improved system such a reduction would have taken so long that lay-off compensation would have had to be paid. While certain other elements in the situation would protect good management, the possibility of having the firm with high ideals and low turnover suffer because of the lower ideals and high turnover of a keen competitor, makes it necessary to consider the adjustment of rates with some reference to the total separations. Just how can this be effected in a practical way? The obstacles seem almost insurmountable. That is why the simplicity and directness of the provisions of the Huber Bill make it a good start in the exercise of social pressure to reduce the chief evils of unemployment.

---

[1] Twentieth Annual Report of the United States Steel Corporation for the fiscal year ended December 31, 1921. Page 28.

[2] "Scientific Management as a Solution of the Unemployment Problem," by Morris Llewellyn Cooke. Reprinted from Vol. LXI of *The Annals* of the American Academy of Political and Social Science. Page 11.

ANNUAL BUSINESS MEETING

THE annual business meeting of the Society was held Wednesday evening, November 22, following a dinner at the Café Boulevard, New York.

The place of meeting and the dinner were unusually satisfactory. The attendance, however, was not satisfactory; there should be more than fifty members at a business meeting of the Society. It is apparent that the evening before the beginning of the public sessions is not a suitable time at which to hold a business session. Members from out of the city, particularly, find it inconvenient to arrive before the morning of the first day of public sessions. Notwithstanding the small attendance, the meeting was one of interest and enthusiasm.

After introductory remarks by President Richard A. Feiss, the meeting proceeded as follows:

1. *Election of Officers.* A special committee consisting of Clarence E. Davies, Joseph W. Briggin and Francis Goodell announced the following result of the letter ballot for officers for the year 1922-1923:

President	—Richard A. Feiss	*400
	H. K. Hathaway	7
	Scattering	6
Vice-President	—Howard Coonley	*391
	H. K. Hathaway	11
	Scattering	8
Treasurer	—Edward W. Clark 3d	*405
	Scattering	2
Two Directors	—John H. Williams	*227
	Keppele Hall	*208
	A. B. Rich	149
	Percy S. Brown	98
	Horace B. Drury	90
	Scattering	8

2. *Reports of Officers.* The Treasurer's report was presented and placed on file. Mimeograph copies were distributed among those present. As soon as the auditing is completed printed copies will be sent to all members.

The report of the Managing Director was informal; he stated that his formal report—concerning the development of the work of the Society—had already been submitted to the membership in the pamphlet "What Is the Taylor Society?" His principal purpose at the business meeting was to give information concerning the intensive membership campaign to be held in January. Following the statement of the Managing Director members of the Membership Promotion Committee explained various details of the campaign. These are presented elsewhere in the BULLETIN, under the caption "Plans of the Society."

3. *Special Business.* Under this heading the following vote was proposed by the Directors and was passed without dissent: "Voted: That the president be and hereby is authorized to appoint a committee of five members whose duty shall be to consider revision of the Constitution, and if they so decide, to propose revision of the Constitution; and that any revision of the Constitution proposed by such committee, if approved by the Board of Directors, shall be presented directly to the members of the Society by letter ballot for their vote; such action by the committee being hereby approved as satisfying the requirement of preliminary action by those present at this meeting, in accordance with Article C29 of the Constitution."

PLANS OF THE SOCIETY

1. *The Financial Problem*

THE Treasurer's report for the fiscal year ending Oct. 31, 1922, discloses a deficit of about $2,000, inclusive of depreciation charges. The preceding year had shown a deficit of $1,800; 1920 a deficit of $6,800; 1919 a deficit of $2,900. Thus there has been a deficit every year since the establishment of the work of the Society on its present scale. These deficits have been taken care of in one way and another by the efforts of a small group of members.

Realizing that such a society as the Taylor Society must be eventually financially self-sustaining, and realizing that to be self-sustaining there must be a larger membership, the Society in the Fall of 1920 instituted a two-year membership campaign, the peculiar feature of which was that each member subscribing to the campaign had the option of securing the number of new members he specified in the subscription, or of paying in cash for two years an amount equal to the dues of the number of new members specified. It was expected that the subscriptions would be liquidated in practically all instances by the securing of new members; as a matter of fact, however, although many new members have been secured, in the greater number of cases subscription obligations have been met by cash payments. This outcome has been a result of the depression which appeared after the campaign was under way; all similar societies have experienced difficulty in holding old members, to say nothing of the difficulty of securing new members. The campaign has resulted therefore in only a temporary financing of the Society, and not in a permanent financing, as had been hoped. From the point of view of temporary financing the membership responded nobly; the total subscription for the two-year period was $20,895; of this $5,690 has been liquidated by new members secured and $13,861 by cash payments; the balance remains to be liquidated in one or the other of these ways during the last months of the two-year period—October, November and December, 1922.

2. *The January 1923 Membership Campaign*

During the Summer of 1922 President Feiss presented the problem to a large number of members through personal correspondence, and it was the judgment of a large majority of those consulted that decisive action should be taken to increase membership to a point which will make the Society self-sustaining. It was believed that such an effort would be successful, in view of the turn for the better in industrial conditions. Accordingly a special Membership Promotion Committee was appointed to plan and conduct a membership campaign. This Committee consists of Henry S. Dennison, Chairman; Howard G. Benedict; John M. Bruce; G. V. S. Carroll; Willard E. Freeland; A. B. Rich, and John H. Williams.

The Committee met October 30th and decided upon an intensive membership campaign to be held simultaneously in all parts of the country where there are at present members, during the two weeks January 15-27, 1923. It will be an out-and-out, intensive campaign with a quota to work to, and with no "subscriptions" or other impedimenta. The country, according to present membership, is being organized into thirty major and forty-nine minor districts, each with a District Committee and District Chairman. Each District Committee will be assigned a quota and will be expected to make the quota. Lists of prospective members will be sent to each District Committee, to which are to be added names locally selected. A "Sales Manual" is being prepared, as well as other material for use by District workers. The pamphlet "What Is the Taylor Society?" recently sent to all members, was prepared as a first, basic document to be used in the campaign. It is expected that every member will be a field worker in the campaign, and each should study this pamphlet carefully, in order to familiarize himself thoroughly with the nature of the commodity he will be called upon to sell.

Every member should now get in training for his task during the two weeks, January 15-27, 1923.

3. *Local Sections*

The work of the Society in general, and membership in particular, can be promoted by the organization of additional local sections, and by a strengthening of the work of existing local sections. The striking success of the new Central New York Local Section has stimulated the local section idea. A meeting of local section secretaries is planned for the near future, and preparatory to such a meeting, the central office is securing from local section officers, and is analyzing and classifying, the experience necessary to make such a meeting profitable.

4. *Student Sections*

The School of Commerce of Ohio State University has the honor of having organized the first Student Section of the Taylor Society. Such affiliations fall directly in line with the educational ideals of the Society. It is ready to lend its resources in assistance to students who are studying management, and students so helped become potential future members of the Society. The Society has given considerable assistance to individual students who have been writing theses or making other special studies in the management field; through student sections that contact can be extended and made more effective.

5. *Work of the Managing Director*

The service to members, explained in "What Is the Taylor Society?" is becoming more important and more exacting. To build this service up to what it should be, requires more intimate contact between the Managing Director and the plants and work of members. He should not have to wait until reports of new ideas, new methods and new achievements on the part of members come to him; he should be enabled to search them out. It is the expectation that the January membership campaign will show such good results that the financial problem of better contact between the Managing Director, local sections and member plants will be solved.

THERE is no originality about scientific management. And, gentlemen, I am proud of it; I am not ashamed of it, because the man who thinks he can place his originality against the world's evolution, against the combined knowledge of the world, is pretty poor stuff.—*Frederick W. Taylor* (1911).

PROGRAM OF THE FALL MEETING

THE program of the Fall meeting of the Society, held in the Engineering Societies Building, New York, November 22-24, is reproduced for the purpose of permanent record.

WEDNESDAY, NOVEMBER 22, EVENING

Informal dinner at the Café Boulevard, followed by the annual business meeting.

THURSDAY, NOVEMBER 23, FORENOON

Richard A. Feiss, presiding. Paper: The Organization and Management of a Medium-Sized Plant; by Percy S. Brown, Works Manager, The Corona Typewriter Company, Groton, N. Y. Discussion led by L. Herbert Ballou, Lewis Manufacturing Company, Walpole, Mass.; and Richard H. Lansburgh, Wharton School, University of Pennsylvania. General Discussion.

THURSDAY, NOVEMBER 23, AFTERNOON

Malcolm C. Rorty, presiding. Paper: Statistical Compilation: Some of its uses as a function of scientific management: by Harry B. Horwitz, Planning Department, Harry A. Wembridge, Statistical Division, and Herman J. Hutkin, Methods Division, The Joseph and Feiss Company, Cleveland, O. Discussion led by Floyd W. Woodcock, Day and Zimmermann, Inc., Philadelphia, Pa. General discussion.

THURSDAY, NOVEMBER 23, EVENING

Reginald A. Wentworth, presiding. Address: Shaping Your Management to Meet Development Industrial Conditions; by H. S. Person, Managing Director, Taylor Society, New York. Discussion led by W. R. Mattson, Babson Statistical Organization, Wellesley Hills, Mass., and Morris L. Cooke, Philadelphia. General discussion.

FRIDAY, NOVEMBER 24, FORENOON

Charles W. Hoyt, presiding. Papers: Master Budgets of Sales and Production: Case 1—The Hood Rubber Company, by W. W. Duncan, Hood Rubber Company, Watertown, Mass.; Case 2—The Dennison Manufacturing Company, by Ernest E. Brooks, The Dennison Manufacturing Company, Framingham, Mass. Discussion led by M. A. Seeley, Elliott-Fisher Company, New York; Elliot Reid, Torsion Test Piston Ring Corporation, New York; and Willard E. Freeland, Massachusetts Institute of Technology. General discussion.

FRIDAY, NOVEMBER 24, AFTERNOON

H. S. Person, presiding. Paper: Reduction of Waste Through Research Studies in the Operating Departments of Retail Stores; A summary of results of recent studies by the Retail Research Association; by Philip J. Reilly, Associate Director, Retail Research Association, New York. Discussion led by J. B. Swinney, Associated Dry Goods Corporation of New York, and Wm. H. Leffingwell, The Leffingwell-Ream Company, New York. General discussion.

FRIDAY, NOVEMBER 24, EVENING

F. L. Sweetser, presiding. Symposium: The Supervision of Personnel; Conclusions concerning its durable contest resulting from the experiences of a boom and a depression. Led by Louise C. Odencrantz, Smith & Kauffmann Company, New York; H. C. Link, United States Rubber Company, New York; W. H. Winans, Union Carbide Company, New York; and Philip Brasher, Tidewater Oil Company, New York. General discussion.

REVIEWS

The Management of the Sales Organization. By Frederick A. Russell, McGraw-Hill Book Co., Inc., New York, 1922. Pp. VI, 227.

Professor Russell's new book is pleasant reading. The author in his preface states that "It aims to treat only one of the several phases of the general subject; viz., the personnel aspect . . . . attempting to cover this phase rather more thoroughly than has been done in other works on sales management." With this limitation, it is perhaps unreasonable to expect anything of much moment in the book.

Briefly, the book is pleasantly recitative of various things that have to do with the sales department. It flows along, careful to the point of being meticulous in its choice of words and absolutely neutral. It is a wonderful exposition of "on the one hand" and "on the other"; it is neither negative nor yet does it dare to be affirmative.

The introductory chapter is indeed worth while. In fact, it is hard to see how a man could write so interesting and reasonable a chapter as this and then be content to simply be an historian of the other phases treated. One other chapter only appears to be fairly complete, the chapter on Compensation. While none of the materal is new, most of the present-day methods are explained in complete detail. Here, however, the writer is again without conviction and misses the opportunity of doing a real authoritative piece of work because of the limitations he established for himself in his preface; no system of compensation can be worth while that is not developed exactly along the lines of the job to be done as determined by reasonable market and record analysis.

Again, it seems unfortunate to me that he should omit those pleasant but necessary fundamentals underlying all compensation, namely,

1. The type of worker required for the task;
2. The standard of living of this type (cost);
3. The market price of this type;
4. The amount the concern can afford to pay—pre-determined and set aside in "cost to make" the product.

It seems unfortunate also, that a book devoted to the problems of personnel should recognize the work done by Dr. Scott and others with merely a casual mention. If this book had contained a record of all of the tests that are now being used successfully, if it had also admitted that there were semi-sciences in the selection of personnel, it would have been immensely worth while. Many skeptics and doubters are waiting for something authoritative along these lines.

The book is a pleasant rehash of articles from magazines, sales service units and general reading. It does not bear the stamp of the road, or the tug of the grip. It is hard to conceive the writer braving the terrors of a kerosene lamp in a mid-western hotel to send a report back to his sales manager, or hopping the midnight rattler to save a day in Urbana. It undoubtedly does present a fair summary of methods in use today. It may prove inspirational to salesmen and saleswomen who do not have an opportunity to read *Printers' Ink* and other media in the sales advertising field.

As I see it, this particular day and generation needs books that will affirmatively point out the proper methods of decreasing sales costs, whether in personnel, or an organization, or anywhere else. Sales engineering or sales planning is here to stay because there is a real need for sales planning. The book is out of step.

HARRY R. WELLMAN.[1]

Essais sur L'Organisation dans les Affaires. By Paul Carel. Paris, 1921, pp. vi, 176.

Organisation Ratéonnelle d'une Usine Travaillant en Série et Montages D'Atelier. By Aimé Petitet. Paris, 1921, pp. vi, 180.

The volume by M. Carel aims to clarify for French readers the American method of organization; which, for the author, is synonymous with the principles of industrial organization as set forth by the late Frederick W. Taylor.

In passing to France, it is apparent that Taylor's many-sided scientific management has become radically simplified in form. M. Carel's version of the Taylor system at once leaves out much that has bulked large in the methods of Taylor and his American disciples; and, on the other hand, it assumes that Taylor is the originator of general principles of reasoning and action broader than his most enthusiastic followers would think of trying to appropriate. The Taylor method, as M. Carel explains it, consists in analyzing any job with which one is concerned into its elements, timing each movement by a stop watch (likewise observing elements that cannot be thus measured), and then, in the light of these observations, eliminating all unnecessary operations, while arranging that these operations which remain shall be done in the very best way.

This undoubtedly is the key to Taylor's whole system of management. But scientific management loses much of its content when no consideration is paid, either to any of its special wage systems (now, it is true, of declining importance), or to such inventions as functional organization, standardization, the elaborate technique of routing, stores keeping, etc., which in America have often constituted the chief visible signs of the development of Taylor methods. When, however, the author goes so far as to credit Taylor with the origin of such an elementary business calculation as the division of cost of production into its essential parts, the determination from such an analysis of how much would be saved by locating a plant in the center of the production of its raw material instead of at a distance, of whether it is cheaper to transport by wagon or motor truck—when the author lists as an application of the Taylor system a purely technical study of the amount of coal which can profitably be used at various stages of a heat process—it is evident that in France Taylor has become somewhat of a general symbol for exact and careful method in industrial affairs, instead of simply the author of the reasonably definite philosophy and system of management which in America bears his name.

M. Carel devotes an important section of his book to defending elementary time study against those who hold that it is not scientific. French critics have reproached Taylor with ignorance of the motion studies made in the scientific laboratories, particularly the graphic methods invented by Professor Marey. Replying to this criticism, Carel points out that "one of the principal disciples of Taylor," Mr. Gilbreth, has made profound studies of movements by means of his micro-motion study, which constitutes a very direct application of the methods of Professor Marey. Carel regrets that Taylor was ignorant of the work of Marey and the other French savants, but asserts that his cruder methods are really better adapted to the workshop than the more refined methods of the scientists. As against critics who affirm that the timing of the parts of work must miss certain of a man's physiological and psychological reactions (which are a part of his work cycle taken as a whole), so that the only correct time is the over-all time, M. Carel replies that only by a study of the work elements in a detailed way is it possible to make technical improvement. Adversaries of the Taylor system hold that Taylor methods are not capable of giving a true measure of fatigue, which should be approached by a study of reaction times, as revealed by the chronoscope of d'Arsonval, or the study of changes in blood pressure, as shown by such devices as the oscillometer of Pachon or the tonometer of Gaertner. Carel concedes that these latter methods would be of higher scientific value, but holds that Taylor's more intimate knowledge of industrial conditions would give him the better results. French savants are too detached from industry to judge of the many moral and technical considerations which affect a man at work aside from the movements under immediate observation. Also studies made in a laboratory are under artificial conditions.

Half or more of M. Carel's book is devoted to an application of what he calls Taylor method to the analysis and filing of business papers, especially sales correspondence. A numerical classification of names figures very large in the plan.

M. Petitet's *Organisation Rationnelle* begins with a chapter on the Taylor system, which he calls a system for the utilization of labor, having for its object maximum production and the prosperity of both employer and employee. But the Taylor system, though much discussed, is poorly understood in France, especially when it comes to practical development. So the author proposes to dismiss the more general principles of organization with a word, and devote his book to giving a practical illustration of just how a factory may be operated. After a matter-of-fact description of the layout of a factory and the duties of the general officers, the bulk of the book is taken up with an almost purely engineering discussion of the various processes in making a projectile. There is little in Petitet's book on what could properly be called organization; still less on scientific management. Yet the tone of the book agrees with M. Carel's *Essais* in testifying to a pervading interest in France concerning Taylor—sometimes approving, sometimes derogatory. The management principles which have actually taken root in France would seem, however, to be about as often the ordinary maxims of American manufacture as the special methods emphasized by Taylor: "Never allow a man to do work that can be done by a machine"; "Eliminate fatigue from useless movements"; "Bring material to the worker"; "Run machinery without stopping until it is worn out."

NECROLOGY—1922

Adrian T. McDonald

Harold Leland Merkel

Myrton E. Ream

Alfred Charlton Wessmann

---

[1] Professor of Marketing, Amos Tuck School.

OBJECTS OF THE SOCIETY

(Extract from the Constitution)

The objects of this Society are, through research, discussion, publication and other appropriate means:

1. To secure an understanding and intelligent direction of the principles governing organized effort for the accomplishment of industrial and other social purposes for the common benefit of

   A. The Community
   B. Labor
   C. The Manager
   D. The Employer

2. To secure the gradual elimination of unnecessary effort and of unduly burdensome toil in the accomplishment of the work of the world.

3. To promote the scientific study and teaching of the principles governing organized effort, and of the mechanisms of their adaptation and application under varying and changing conditions.

4. To promote general recognition of the fact that the evaluation and application of these principles and mechanisms are the mutual concern of the community, labor, the manager and the employer.

5. To inspire in labor, manager and employer a constant adherence to the highest ethical conception of their individual and collective social responsibility.

MEMBERSHIP

Members are elected by the Board ot Directors. Application must be made on a form which may be secured of the Managing Director. There are five classes of members:

1. Honorary Member: Elected for distinguished service in the promotion of the science of management.
2. Senior Member: Thirty years of age or over; connected with organization, management or management engineering, as one in responsible charge of installing methods, as executive, as social scientist, or as teacher. (Initiation fee, $15; Annual dues, $15.)
3. Associate Member: Twenty-five years of age or over; interested in cooperating in the work of the Society toward the advancement of the science of management. (Initiation fee, $15; Annual dues, $15.)
4. Junior Member: Twenty-one years of age and not over thirty; experienced in subordinate functions of management or management engineering or graduate of a school of engineering, business administration or commerce of collegiate rank. (Initiation fee, $5; Annual dues, $5.)
5. Sustaining Member: Individual, firm, corporation or organization so interested in the advancement of the science of management as to wish to promote the work of the Society by annual contribution; privileged to designate two individuals who shall be entitled to all the rights and privileges of members (including receipt of the Bulletin) except to vote and to hold office. (Dues, $35.)

A MANAGEMENT ENGINEERS' CREED

The sublimest duty of the engineer is to keep the faith:

The faith of the client that he will not undertake what he knows to be beyond his ability; and that with respect to what he undertakes he will give conscientious service to the limit of his ability;

The faith of his fellow engineers that he will remain true to his science and will magnify and not cheapen it; and that he will base his efforts for public recognition upon ability, scientific attainment and actual performance, and not upon ambiguous self-laudation;

The faith of the community that he will undertake no service inconsistent with the public welfare; and that in service consistent with the public welfare, but in which the interests of groups appear to come in conflict, he will judge carefully and sympathetically the claims of rival interests, and attempt to establish that unity of purpose which promotes the public welfare.